



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



KOLHAPUR (AUTONOMOUS)

Curricular Relevance: Course Outcomes with Relevance to Local, Regional, National, Global Needs
(2018-19 to 2023-24)

Sr. No.	Name of the Course	Course code	Year of Introduction	COs with relevance to local/regional needs	COs with relevance to national needs	COs with relevance to global needs
B.Sc. Physics (Newly Introduced between 2018-19 and 2020-21)						
1.	Mechanics	DSC1001A	2018-19	CO ₁ : Demonstrate and understand the basic primary knowledge of Mechanics theories in Physics and develop the critical skill in students to understand mechanics.	CO ₃ : Demonstrate a proficiency in solving problems in Elasticity, gravitation, oscillation, Differential equation of Simple harmonic motion, special theory of relativity etc.	
2.	Electricity And Magnetism	DSC1001B	2018-19	CO ₁ : Demonstrate and understand the basic primary knowledge of Electricity, Magnetism and Electromagnetic Theory and will demonstrate a proficiency in solving problems in Thevenin's theorem, and	CO ₃ : Demonstrate a proficiency in solving problems in gradient, divergence, Curl and their significance, Vector Integration, Line, surface and volume integrals of Vector fields, Maxwell's equations.	



S. S. Latta
HEAD
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				Norton's theorem, magnetism, electrostatics etc.	and Electromagnetic wave propagation.	
3.	Thermal Physics, Statistical Mechanics, waves and Optics Part I	DSC1001C	2019-20	CO2: Demonstrate a proficiency in solving problems in Thermal Physics, Statistical Mechanics, waves, and Optics.		CO4: Develop the critical skill in students to understand Thermal Physics, Statistical Mechanics, waves and Optics.
4.	Thermal Physics, Statistical Mechanics, waves and Optics Part II	DSC1001D	2019-20	CO4: Understand the basic concepts of gradient, divergence, Curl and their significance, Gauss-divergence theorem and Stoke's theorem of vectors, Electromagnetic Induction, Maxwell's equations, and Electromagnetic wave propagation etc.		CO2: Understand the basic concepts of Ballistic galvanometer, networks theorem, magnetostatics and electrostatics, electricity, and magnetism etc.
5.	Fundamentals of Astronomy and Fundamentals of Astrophysics	DSC-1511C1	2019-20	CO2: demonstrate a proficiency in solving problems in Astronomy and Astrophysics.		CO4: develop the critical skill in students to understand Astronomy and Astrophysics.
6.	Galaxies, Cosmology, solar system and cosmic electrodynamics	DSC-1511C2	2019-20	CO4: develop the critical skill in students to understand applied knowledge of Galaxies, Cosmology, solar system and cosmic electrodynamics.		CO2: demonstrate a proficiency in solving problems in galaxies Cosmology, solar system and cosmic electrodynamics.



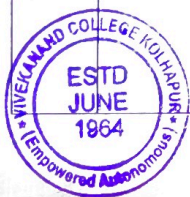
S. Patil
 HEAD
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7.	Classical Mechanics and Quantum Mechanics	DSC1001E1	2020-21	CO ₂ : demonstrate a proficiency in solving problems in classical and quantum mechanics.	CO ₂ : demonstrate a proficiency in solving problems in classical and quantum mechanics.	
8.	Nuclear and Particle Physics and Mathematical Physics	DSC1001E2	2020-21	CO ₂ : demonstrate a proficiency in solving problems in Nuclear and Particle Physics and Mathematical Physics.		CO ₁ : demonstrate and understand the knowledge of Nuclear and Particle Physics and Mathematical Physics
9.	Semiconductor Devices and Instrumentation and Elements of Modern Physics	DSC1001F1	2020-21		CO ₁ : Demonstrate and understand the knowledge of Semiconductor devices and modern physics	CO ₃ : Understand the basic concepts like transistor, diodes, SCR, Solar cell, Photocell, LRD, etc. and vector atom model, Zeeman effect, laser technology, etc.
10.	Solid State Physics I and II	DSC1001F2	2020-21	CO ₁ : Demonstrate and understand the knowledge of crystal structure, lattice theory, magnetic properties, etc. and band theory, dielectric properties, X-ray diffraction, etc.		CO ₄ : Develop the critical skill in students to understand the basic theory of solid-state physics which is useful for further higher studies.
B.Sc. Physics (Revised between 2021-22 and 2023-24)						
11.	Mechanics	DSC1001A	2021-22	CO ₁ : Demonstrate and understand the basic primary knowledge of Mechanics theories in Physics and	CO ₃ : Demonstrate a proficiency in solving problems in Elasticity, gravitation, oscillation, Differential equation of Simple harmonic motion.	



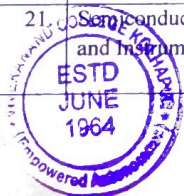
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HEAD
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VIVEKANAND COLLEGE, KOLHAPUR
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				develop the critical skill in students to understand mechanics.	special theory of relativity etc.	
12.	Electricity And Magnetism	DSC1001B	2021-22	CO ₁ : Demonstrate and understand the basic primary knowledge of Electricity, Magnetism and Electromagnetic Theory and will demonstrate a proficiency in solving problems in Thevenin's theorem, and Norton's theorem, magnetism, electrostatics etc.	CO ₃ : Demonstrate a proficiency in solving problems in gradient, divergence, Curl and their significance, Vector Integration, Line, surface and volume integrals of Vector fields, Maxwell's equations, and Electromagnetic wave propagation.	
13.	Thermal Physics, Statistical Mechanics-I and Waves, Oscillations And Acoustics	DSC1001C	2022-23	CO ₃ Demonstrate a proficiency in solving problems in gradient, divergence, Curl and their significance, Vector Integration, Line, surface and volume integrals of Vector fields, Maxwell's equations, and Electromagnetic wave propagation.		CO ₄ : Develop the critical skill in students to understand Thermal Physics, Statistical Mechanics, waves and Optics.
14.	Thermal Physics, Statistical Mechanics-II and Optics	DSC1001D	2022-23	CO ₃ Demonstrate a proficiency in solving problems in gradient, divergence, Curl and their significance, Vector Integration, Line, surface and volume integrals of Vector		CO ₂ : Understand the basic concepts of Ballistic galvanometer, networks theorem, magnetostatics and electrostatics, electricity, and magnetism etc.



S. S. Patil
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				fields, Maxwell's equations, and Electromagnetic wave propagation.		
15.	Fundamentals of Astronomy and Fundamentals of Astrophysics	DSC-1511C1	2022-23	CO ₂ : demonstrate a proficiency in solving problems in Astronomy and Astrophysics.		CO ₄ : develop the critical skill in students to understand Astronomy and Astrophysics.
16.	Galaxies, Cosmology, solar system and cosmic electrodynamics	DSC-1511C2	2022-23	CO ₄ : develop the critical skill in students to understand applied knowledge of Galaxies, Cosmology, solar system, and cosmic electrodynamics.		CO ₂ : demonstrate a proficiency in solving problems in galaxies Cosmology, solar system and cosmic electrodynamics.
17.	Mathematical Physics	DSC1001E1	2023-24	CO ₁ : Understand Cartesian, spherical polar and cylindrical co-ordinate systems.	CO ₃ : Understand applications of partial differential equations	
18.	Nuclear and Particle Physics	DSE-1001E2	2023-24	CO ₁ : Explain about the knowledge of particles.		CO ₄ : Know about the detectors and accelerators
19.	Quantum Mechanics	DSC1001E3	2023-24	CO ₂ : Understand Schrödinger time dependent and time independent wave equations		CO ₃ : Understand applications of Schrodinger equation.
20.	Solid State Physics I	DSC1001E4	2023-24	CO ₂ : know different methods for structural analysis of crystal.	CO ₄ : Explain superconductivity phenomenon and its types.	
21.	Semiconductor Devices and Instrumentation	DSC1001F1	2023-24		CO ₂ : Understand the knowledge of digital electronics.	CO ₃ : Know the devices made up of semiconductors.



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22.	Classical Mechanics	DSC1001F2	2023-24	CO ₁ : Define constraints, Degree of freedom and generalized coordinates etc., and understand principle of virtual work and D'Alembert's principle.	CO ₃ : define Inertial and Non-Inertial reference frames, Understand Michelson Morley Experiment, define Relativistic addition of velocities, Length contraction, Time dilation. Describe mass energy relation.	
23.	Elements of Modern Physics	DSC1001F3	2023-24	CO ₁ : Understand atomic structure, atomic models and atomic spectra.	CO ₄ : understand Milky Way galaxy and origin of solar system.	CO ₃ : Explain concept of X-ray diffraction
24.	Solid State Physics II	DSC1001F4	2023-24	CO ₁ : know about free electron theory, band gap energy, Hall effect		CO ₂ : know about dielectric properties of material



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