



A.V.E.S.
DEPT. OF PHYSICS
ANNUAL TEACHING PLAN
YEAR:2023-2024 CLASS:B.Sc.I Year

TOPIC / SUB TOPIC	PLANNING			EXECUTION		
	Expe. Periods	Expected Duration		Actl. Periods	Actual Duration	
		From	To		From	To
UNIT-I Mechanics						
Laws of mechanics, Newton's law of gravitation, Kepler's laws of planetary motion, Gravitational field, intensity, potential energy, conservation laws, work, power, energy, conservation of energy, conservative and nonconservative force	12	18/8/23	14/9/23	10	18/8/23	10/9/23
UNIT-II Surface Tension						
Molecular forces, ST and its explanation, Pressure difference across the curved surface, Excess pressure inside drop and soap bubble, ST by Jaeger's method and Ferguson method	10	15/9/23	8/10/23	9	14/9/23	10/10/23
UNIT-III Viscosity						
Coefficient of viscosity, streamline flow, critical velocity, Reynold's number, and its significance, Bernoulli's theorem, Poiseuille's equation, Experimental determination of coefficient of viscosity by Poiseuille's method	10	8/10/2023	27/10/23	9	11/10/23	25/10/23
UNIT-IV : Elasticity						
Hooke's law, elastic constants, Poisson's ratio, Twisting couple on a cylinder, Torsional pendulum, Bending of beam, Bending moment, Cantilever (Weight effective, ineffective) Depression of beam supported at ends and loaded at centre, Determination of Y by bending of beam	12	15/7/2023	17/8/2023	11	25-7-23	18/8/23

B. S. Narwade
Name and Sign. Of Teacher
Dr B S Narwade

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DEPT. OF PHYSICS
ANNUAL TEACHING PLAN

2023-24

NAME OF TEACHER : Dr. Bhanudas Narwade
CLASS: B.Sc. II Year

SEMESTER III

PAPER NAME & NO.: Waves, Acoustics & Ultrasonics

SR.NO.	TOPIC / SUB TOPIC	PLANNING		EXECUTION			
		Expe. Periods	Expected Duration		Actl. Periods	Actual Duration	
			From	To		From	To
1	UNIT-I WAVES						
	Introduction, Relation between wave velocity and partial velocity, Differential equation of Equation of vibrating string, Velocity of transverse wave, Frequency and period	11	15/7/23	14/8/23	10	15/8	14/8
2	UNIT-II STATIONARY WAVES						
	Analytical treatment of stationary waves Pressure and density at nodes and antinodes Distribution of energy in stationary wave Energy not transferred	10	21/8/23	13/9/23	10	10/8	10/9
3	UNIT-III FREE AND FORCED VIBRATION						
	Free forced vibration, Resonance Energy of oscillatory motion, Damped SHM in electrical circuit, forced vibration, Resonance and sharpness of resonance, phases of resonance and examples of forced and resonant vibration	10	13/9/23	25/9/23	09	11/9	25/9
	UNIT-IV ACOUSTICS AND ULTRASONICS						
	Reverberation Reverberation time, Sabin's formula, absorption coefficient determination of absorption coefficient conditions for good acoustics ULTRASONICS Piezo-electric and Magnetostriction e Piezo-electric and Magnetostriction o Detection of ultrasonic waves Acoustic grating, Kundt's tube method Applications of ultrasonics	10	21/9/23	18/10/23	08	28/9	23/10

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DEPT. OF PHYSICS

ANNUAL PLAN 2023-24

NAME OF TEACHER: Mr. Bodke A.H

SEMESTER : V



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PAPER NAME & NO.: Quantum Mechanics

UNIT NO	TOPIC / SUB TOPIC	PLANNING			EXECUTION		
		E.Periods	Expected Duration		A. Periods	Actual Duration	
			From	To		From	To
	PARTIAL PROPERTIES OF WAVES						
1	Introduction, Photoelectric effect, Compton effect, de-Broglie waves, Wave function, de-Broglie wave velocity, Wave and Group velocities, G.P. Thomson experiment, Uncertainty principle Applications, Wave particle duality, Numerical Problems	13	17/7/2023	14/8/2023	12	13/8	13/8
	SCHRODINGER'S EQUATION						
2	Time dependent form, probability current	10	21.08.2023	05.09.2023	12	7/9	7/9
	Expectation values, Operators, Schrodinger's						
	Equation - steady state form,						
	Eigen values and function problems						
	APPLN OF QUANTUM MECHANICS						
3	Introduction, particle in a box	9	6/9/2023	26/9/2023	8	8/9	25/9
	Energy quantization, wave function,						
	Momentum quantization, Harmonic oscillator						
	Energy level, Particle in 3-D box						
	QUANTUM THEORY OF H ATOM						
4	Schrodinger's equation for the Hydrogen atom	11	27.9.2023	23/10/2023	13	26/9	25/9
	in spherical polar co-ordinates						
	separation of variables,						
	Quantum Numbers-						
	Total quantum numbers,						
	Orbital quantum numbers, magnetic quantum numbers, spin quantum numbers						

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DEPT. OF PHYSICS

ANNUAL TEACHING PLAN

Class : Bsc - third year



SEMESTER : V

NAME OF TEACHER: Poradwar S. S

PAPER NAME & NO : Solid State Physics

SR.NO.	TOPIC / SUB TOPIC	PLANNING				EXECUTION	
		Expe. Periods	Expected Duration		Actl. Periods	Actual Duration	
			From	To		From	To
1	UNIT-I -Crystal structure	10	20/7/2023	11/2/2023	11	15/7/2023	11/2/2023
	Introduction, Crystal Lattices and Translation vectors, Unit cell, Basis, Symmetry operations, Point groups, space group, Types of lattices, Simple crystal structure (HCP, FCC, BCC, SC), Structure of Diamond, NaCl, Problems.						
2	UNIT-II Bonding in Solid and X-Ray Diffraction	10	12/8/2023	2/9/2023	9	#####	1/9/2023
	Inter atomic forces and types of bonding, ionic bond, covalent bond, metallic bond, hydrogen bond, Vander-waal's bond. X-ray diffraction, Bragg's law, Laue's method, Rotating crystal method						
3	UNIT-III Thermal properties of Solids	12	7/9/2023	5/10/2023	13	2/9/2023	30/9/2023
	Specific heat of gases, Specific heat of solids, Classical theory of Lattice heat Capacity, Einstein's theory of heat Capacity, Debye's theory of specific heat of solids, Limitations of Debye model						
4	UNIT-IV Free Electron Theory of Metals	13	6/10/2023	3/11/2023	13	5/9/2023	31/10/2023
	The outstanding properties of metals, Drude-Lorentz theory, Thermal conductivity, Electrical conductivity, Widemann- Franz relation, Sommerfeld Model, Electrical conductivity and Ohms law, Electronic specific heat, Thermoionic emission, escape of electrons from metal						

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