

Syllabus of Scheme III

S. Y. B. Sc. Physics

(Semester- IV)

Name of the Course: Physics Minor Course 2
Sound (2 Credits)

Sr. No.	Heading	Particulars
1.	Description the course: (Including but not limited to)	Introduction, relevance, Usefulness, Application, interest, connection with other courses, demand in the industry, job prospects etc.
2.	Vertical:	Major / Minor / Open Elective / Skill Enhancement / Ability Enhancement / Indian Knowledge System
3.	Type:	Theory
4.	Credit:	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5.	Hours Allotted:	30 Hours
6.	Marks Allotted:	50 Marks
7.	Course Objectives: The students are expected to:	
	CO 1	gain knowledge of basic concepts in sound
	CO 2	to understand the fundamental principles of sound
	CO 3	to develop practical knowledge of sound measurement and analysis.
8.	Course Outcomes: After successful completion of the course, the students will be able to:	
	OC 1	understand basic concept of sound
	OC 2	understand the basic concept how sound is produced
	OC 3	apply knowledge to develop sound modulations
9.	Modules / Units: - There will be One module / Unit Per Credit	
	Module / Unit I: Wave Motion (15 Hours)	
	Wave motion, characteristic of wave motion, transverse wave, longitudinal wave, relation between frequency and wavelength, equation of Simple Harmonic Wave, particle velocity and wave velocity, energy of a progressive wave.	
	Velocity of Sound: Velocity of longitudinal waves in gases, newton's formula for velocity of sound, effect of temperature, effect of pressure, velocity of sound in water, velocity of sound in air.	
	Module / Unit II: Phenomena of Sound (15 Hours)	
	Stationary waves, properties of stationary longitudinal waves, energy of stationary wave, Interference of sound waves, special cases, Conditions for Interference of sound waves, Introduction to beats. Velocity of transverse waves along a stretched string, laws of transverse wave, verification of the law transverse vibration of strings, Kundts tube, Musical sound and noise, characteristic of musical sound. Acoustics of building: reverberation, explanation of Sabine's formula and importance of Sabine's formula, absorption coefficient, Acoustics of building, factors affecting acoustics of building, sound distribution in an auditorium.	

10.	Reference Books: 1. SB: Waves and Oscillations by Subramanian and Brijlal second revised edition 2. RK: Properties of Matter and Acoustics. R Murugesham and K Shivaprasath.S 3. RS: Fundamentals of Physics by Resnick and Halliday	
11.	Individual Passing in Internal and External Examination	
12.	Internal Continuous Assessment: 40% (20 Marks)	External, Semester End Examination:60% (30 Marks)
	Continuous Evaluation through: Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc. (at least 3)	Evaluation: through Exam at the End of the Semester / Term.
13.	Format of Question Paper for Physics Minor Term End Examination for 30 Marks: Duration of the Term End Examination: One Hour	
	Unit - I (15 Marks)	Q.1 A) Attempt any Two 10 Marks i) Theory ii) Theory iii) Theory iv) Theory B) Attempt any One 05 Marks i) Problem / Theory ii) Problem
	Unit – II (15 Marks)	Q.2 A) Attempt any Two 10 Marks i) Theory ii) Theory iii) Theory iv) Theory B) Attempt any One 05 Marks i) Problem / Theory ii) Problem