# Lesson Plan
# MCM DAV College for Women, Sector – 36A, Chandigarh
# Monthly Teaching Plans (Odd Semester/Even Semester)
# Session – (2025-26)
# Odd Semester

**Name of the Teacher: Dr. R. Ridhi**
**Department: Physics Department**
**Class: B.Sc. Semester 3**
**Subject: PHY-DSC-4 Maj/Min-302: VIBRATIONS, WAVES & E.M. THEORY**

| S. No. | Date (Monthly) | | Topics to be Covered | Academic Activity Undertaken* |
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| | From | To | | |
| 1 | 24/07/2025 | 15/8/2025 | Simple harmonic motion, energy of a SHM, Compound Pendulum, Torsional Pendulum, Electrical Oscillations, Transverse Vibrations of a mass on a string, Decay of free vibrations due to damping, Differential equation of motion, types of damping, determination of damping co-efficient | Lecture Method, Class Tests and Practical demonstrations |
| 2 | 16/8/2025 | 15/9/2025 | Logarithmic decrement, relaxation time and Q- Factor. Electromagnetic damping (Electrical oscillator), Differential equation for forced mechanical and electrical oscillators, Transient and steady state behaviour. Displacement and velocity variation with driving force frequency, variation of phase with frequency, resonance. | Lecture Method, Group Discussion, Practical demonstrations and Class Tests |
| 3 | 16/9/2025 | 15/10/2025 | Power supplied to an oscillator and its variation with frequency. Q-value and band width. Waves in physical media, Wave equation and its solution, Types of waves, particle velocity, acceleration and energy in progressive waves. Transverse waves on a string, characteristic impedance of a string, Reflection and Transmission of transverse waves on a string at discontinuity. Reflection and transmission of energy. Reflection and transmission of longitudinal waves at a boundary. Impedance matching, Energy of vibrating string. Wave and group velocity. | Lecture Method, Online Sources and Practical demonstrations |
| 4 | 16/10/2025 | 10/11/2025 | Maxwell's equations, E.M. waves and wave equation in a medium having finite permeability, permittivity and conductivity. Energy flow due to EM wave - Poynting vector, Impedance of a dielectric to EM waves. EM waves in a conducting medium and skin depth. Impedance and Refractive index of a dielectric and a conductor. | Lecture Method, Online Sources and Group Discussion |