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| **Course/Subject Name** | **AUDIO SYSTEM ENGINEERING** | | | **Subject Code** | **ET60006** |
| **L-T-P** | 3-0-0 | **Type** | ELECTIVE | **Credit** | 3 |
| **Course Overview** | Today Audio engineering is a very competitive and important field. Specially students of civil and Architecture discipline must have the knowledge on acoustic to design large room and small room acoustics. There are tons of skills and experience needed to become a good audio engineer with knowledge in acoustic. This course will get you started on some things you need to know. | | | | |
| **Course Outcome** | * Given the specification of an acoustic room (large room or small room acoustic) determine the reverberation time, mean free path, number of reflection per second, room modes and minimum volume for large room acoustic. * Given the specification for a auditorium or studio requirement list the acoustical requirements and design the acoustic part of the auditorium or studio. * Given the necessary specification design the microphone and loudspeaker * Determine the sound reflection, transmission, absorption, coefficients for a given acoustic source and condition. | | | | |
| **Course Coverage**  **[Module wise topic list]** | |  |  |  | | --- | --- | --- | | **Sl No.** | **Module Name** | **Lecture Hours** | | Module-1 | **Introduction**  Introduction of acoustic, Fundamentals of Linear Vibrations, Equivalent electrical circuits for mechanical oscillation |  | | Module-2 | **Acoustic Wave Equation:**  Acoustic Variables, Continuity Equation, Force Equation, Linear Wave Equation, Harmonic Plane Waves, Spherical Wave Equation |  | | Module-3 | **Sound Perception:**  Introduction about Human Ear, Auditory Perception, Perceptual Dimensions of sound, Perception of Sound, Loudness, Perception of Frequency, |  | | Module-4 | **Sound Transmission:**  Sound Reflection, Transmission and Absorption, Mass Law, |  | | Module-5 | **Room Acoustics:**  The Acoustic Environment, A Simple Model for the growth of sound in a room, Reverb time, Mean Free Path, large room acoustics, small room acoustics, Semi-reverberant room, Room modes |  | | Module-6 | **Auditorium acoustics**  Acoustical Requirements in Auditorium Design, list of acoustic materials, design of acoustic part of the auditorium or studio |  | | Module-7 | **Sound Transduction:**  Reciprocal Transducer, Antireciprocal Transducer, Design of Microphones, Design of Loudspeaker |  | | | | | |
| **Primary Text Book for study** | Fundamentals of Acoustics by Lawrence E. Kinsler, Austin R. Frey, Alan B. Coppens, James V. Sanders | | | | |
| **References Materials** |  | | | | |