

## **Industrial Noise and Vibration**

**Syllabus:** Basics of sound and noise: definitions, sound pressure level and sound power level, one-third octave band analysis; Adverse health effects of noise: annoyance, irritation, tinnitus and noise induced hearing loss(NIHL); Audiometry: principles and applications; Noise measurement and analysis: Area sampling, personal sampling and noise dosimetry; Industrial noise and community noise, Noise reaction indices; Environmental propagation of noise: noise modeling of industrial complex, introduction to noise mapping; Noise control engineering: noise reduction of machines and industrial processes, noise barrier (natural and artificial); Hearing protection: theories and applications. Vibration basics: waveform, magnitude, frequency and resonance; Classification of vibration by waveform, magnitude, contact site, effect and frequency; Vibration axes; Vibration measurement: acceleration, velocity and displacement; Whole-body vibration (WBV): perception in seated and non-seated postures, frequency weightings, Optimization of vehicle seating comfort, SEAT Factor measurement and analysis; Biomechanical response to WBV; Motion sickness, Hand-transmitted vibration: adverse health effects, measurement and analysis; Human vibration ISO Standards; Protection from vibration exposure.