

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mechanical Engineering - Acoustics

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Co-ordinating Institute - IIT - Kanpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Intro, sound wave versus vibration, different types of waves, octave, music scales, sense of SPL
Lecture 2 - Review
Lecture 3 - Review
Lecture 4 - Review
Lecture 5 - 1-D wave equation, and its solution
Lecture 6 - Solution for 1-D wave equation
Lecture 7 - Waveguides, transmission line equations, and standing waves
Lecture 8 - Waveguides, transmission line equations, and standing waves
Lecture 9 - Examples of 1-D waves in tubes, short tubes, Kundt's tube
Lecture 10 - Thermodynamic processes during sound transmission
Lecture 11 - Numerical examples
Lecture 12 - Sound transmission through walls
Lecture 13 - Sound transmission through walls
Lecture 14 - Leakage in walls, STC Ratings, Octave bands
Lecture 15 - Instantaneous power flow
Lecture 16 - Radial propagation of sound, monopoles, and dipoles
Lecture 17 - Radial propagation of sound, monopoles, and dipoles
Lecture 18 - Radial propagation of sound, monopoles, and dipoles
Lecture 19 - Numerical examples
Lecture 20 - Numerical examples
Lecture 21 - Directivity
Lecture 22 - Directivity
Lecture 23 - Directivity
Lecture 24 - Directivity
Lecture 25 - Generalized elements
Lecture 26 - Examples of electromechanical systems
Lecture 27 - Transformers, radiation impedance, and Helmholtz resonator
Lecture 28 - Radiation impedance
Lecture 29 - Radiation impedance

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- Lecture 30 - Models of electro-mechanical-acoustic systems
- Lecture 31 - Solution for a loudspeaker model
- Lecture 32 - Microphones
- Lecture 33 - Vibro-meter, seismometer, accelerometer, shaker table
- Lecture 34 - Sound propagation in rooms, 1-D rooms, 2D rooms
- Lecture 35 - Sound in 3-D rooms
- Lecture 36 - Absorption coefficient, and irregular rooms
- Lecture 37 - Room constant, and Sabine's coefficient
- Lecture 38 - Design of a muffler
- Lecture 39 - Noise in machines, basics of noise management