

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

NPTEL Video Course - Mechanical Engineering - NOC:Fundamentals of Acoustics

Subject Co-ordinator - Prof. Nachiketa Tiwari

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Lesson 1 - Course Overview
Lecture 2 - Lesson 2 - Introduction
Lecture 3 - Lesson 3 - Nature Of Sound
Lecture 4 - Lesson 4 - The Decibel scale
Lecture 5 - Lesson 5 - Key Terms In Acoustics
Lecture 6 - Lesson 6 - Adding Decibels
Lecture 7 - Lesson 1 - Important Mathematical Concepts-Complex Algebra
Lecture 8 - Lesson 2 - Important Mathematical Concepts-Complex Time Signals
Lecture 9 - Lesson 3 - Important Mathematical Concepts-Transfer Function
Lecture 10 - Lesson 4 - Important Mathematical Concepts-Pole Zero Plot
Lecture 11 - Lesson 5 - Important Mathematical Concepts - Bode Plot For Simple Pole
Lecture 12 - Lesson 6 - Important Mathematical Concepts - Bode Plot For Simple Zero
Lecture 13 - Lesson 1 - Bode Plots (Magnitude) for Complex Transfer Functions
Lecture 14 - Lesson 2 - Momentum Equation for 1-D Sound Propagation
Lecture 15 - Lesson 3 - Continuity Equation for 1-D Sound Propagation
Lecture 16 - Lesson 4 - Gas Law for 1-D Sound Propagation
Lecture 17 - Lesson 5 - 1-D Wave Equation
Lecture 18 - Lesson 6 - Solution for 1-D Wave Equation
Lecture 19 - Lesson 1 - Waveguide
Lecture 20 - Lesson 2 - Transmission Line Equations - Part I
Lecture 21 - Lesson 3 - Transmission Line Equations - Part II
Lecture 22 - Lesson 4 - Transmission Line Equations - Part III
Lecture 23 - Lesson 5 - Transmission Line Equations - Part IV
Lecture 24 - Lesson 6 - Transmission Line Equations - Part V
Lecture 25 - Lesson 1 - Instantaneous Power
Lecture 26 - Lesson 2 - Instantaneous Power in a L-R Circuit
Lecture 27 - Lesson 3 - Power Factor, and Acoustic Power
Lecture 28 - Lesson 4 - Power Flow into an Infinitely Long Tube
Lecture 29 - Lesson 5 - Point Sources of Sound

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- Lecture 30 - Lesson 6 - Relations for Outward Travelling Spherical Acoustic Wave
- Lecture 31 - Lesson 1 - Specific Acoustic Impedance for a Closed Tube
- Lecture 32 - Lesson 2 - Specific Acoustic Impedance for an Open Tube and an Infinitely Long Tube
- Lecture 33 - Lesson 3 - Specific Acoustic Impedance for a Tube with Imperfect Termination
- Lecture 34 - Lesson 4 - Kundt's Tube
- Lecture 35 - Lesson 5 - Volume Velocity
- Lecture 36 - Lesson 6 - Comparison of Impedances for a Radially Propagating Wave and a Planar Wave
- Lecture 37 - Lesson 1 - Interference of sound sources - Part I
- Lecture 38 - Lesson 2 - Interference of sound sources - Part II
- Lecture 39 - Lesson 3 - Interference of sound sources - Part III
- Lecture 40 - Lesson 4 - Interference of sound sources - Part IV
- Lecture 41 - Lesson 5 - Directivity
- Lecture 42 - Lesson 6 - Complex power, pressure and velocity for a spherical source
- Lecture 43 - Lesson 1 - Noise reduction - Mass Attenuation Method
- Lecture 44 - Lesson 2 - Noise Reduction - Pressure Ratio
- Lecture 45 - Lesson 3 - Noise Reduction - Velocity of Wall
- Lecture 46 - Lesson 4 - 3 Media Problem - Introduction
- Lecture 47 - Lesson 5 - 3 Media Problem - Apply Boundary Conditions
- Lecture 48 - Lesson 6 - 3 Media Problem - Special cases
- Lecture 49 - Lesson 1 - Mufflers
- Lecture 50 - Lesson 2 - Designing of Reactive Mufflers
- Lecture 51 - Lesson 3 - Designing of Dissipative Mufflers
- Lecture 52 - Lesson 4 - Time and Frequency Domain Representation of a Signal
- Lecture 53 - Lesson 5 - Fourier Series
- Lecture 54 - Lesson 6 - Fourier Series
- Lecture 55 - Lesson 1 - Fourier Transform
- Lecture 56 - Lesson 2 - Fourier Transform
- Lecture 57 - Lesson 3 - Fourier Transform
- Lecture 58 - Lesson 4 - Discrete Fourier Transform (DFT)
- Lecture 59 - Lesson 5 - Discrete Fourier Transform (DFT)
- Lecture 60 - Lesson 6 - Discrete Fourier Transform (DFT)
- Lecture 61 - Lesson 1 - Measuring Sound Signals
- Lecture 62 - Lesson 2 - Microphones
- Lecture 63 - Lesson 3 - Microphones
- Lecture 64 - Lesson 4 - Weighting
- Lecture 65 - Lesson 5 - Loudness
- Lecture 66 - Lesson 6 - Loudness
- Lecture 67 - Lesson 1 - Octave Band Analysis - Part I
- Lecture 68 - Lesson 2 - Octave Band Analysis - Part II

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- Lecture 69 - Lesson 3 - Octave Band Analysis & Part III
- Lecture 70 - Lesson 4 - Reverberation Time
- Lecture 71 - Lesson 5 - Calculation of Reverberation Time and Sound Transmission Class (STC)
- Lecture 72 - Lesson 6 - Noise Reduction Coefficient (NRC)