

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

NPTEL Video Course - Mechanical Engineering - NOC:Machinery Fault Diagnosis and Signal Processing

Subject Co-ordinator - Prof. Amiya Ranjan Mohanty

Co-ordinating Institute - IIT - Kharagpur

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

- Lecture 1 - Introduction
- Lecture 2 - Maintenance Principles
- Lecture 3 - FMECA
- Lecture 4 - Fault Diagnostics and Prognostics
- Lecture 5 - Machine Learning in CBM
- Lecture 6 - Basics of Vibration
- Lecture 7 - Free and Forced Response
- Lecture 8 - Vibration and Shock Isolation
- Lecture 9 - Rotordynamics
- Lecture 10 - Practical Examples of Vibration
- Lecture 11 - Time Domain Analysis
- Lecture 12 - Frequency Domain Analysis
- Lecture 13 - Non Stationary Signal Analysis
- Lecture 14 - Modulation and Beats
- Lecture 15 - Orbit and Order Analysis
- Lecture 16 - Computer aided data acquisition
- Lecture 17 - Orbit and Order Analysis
- Lecture 18 - Data Recording
- Lecture 19 - Cepstrum Analysis
- Lecture 20 - Hilbert Transform in Condition Monitoring
- Lecture 21 - Introduction to MATLAB
- Lecture 22 - Signal Processing using MATLAB
- Lecture 23 - Numericals in Signal Processing and Data Acquisition
- Lecture 24 - Signal Hetrodnying
- Lecture 25 - Practical Signals
- Lecture 26 - Basics Of Instrumentation
- Lecture 27 - Signal Conditioning And Filtering
- Lecture 28 - Errors In Measurements
- Lecture 29 - Dynamic Range And Frequency Response

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- Lecture 30 - Overview Of Transducers For Cbm
- Lecture 31 - Accelerometers
- Lecture 32 - Vibration Monitoring
- Lecture 33 - Rotational Speed Measurements
- Lecture 34 - Basics of Noise
- Lecture 35 - Noise Monitoring
- Lecture 36 - Introduction to Faults in Rotating Machines
- Lecture 37 - Unbalance Detection
- Lecture 38 - Field Balancing
- Lecture 39 - Misalignment
- Lecture 40 - Crack and Looseness
- Lecture 41 - Journal and Anti-Friction Bearings
- Lecture 42 - Gears
- Lecture 43 - Pumps and Cavitation
- Lecture 44 - IC Engines
- Lecture 45 - Machinery Diagnostic Chart
- Lecture 46 - Principles of Motor Current Signature Analysis
- Lecture 47 - Faults in Electrical Machines
- Lecture 48 - Thermography
- Lecture 49 - Wear Debris Analysis
- Lecture 50 - Oil Analysis
- Lecture 51 - Ultrasonics
- Lecture 52 - Eddy Current and Acoustic Emission
- Lecture 53 - Radiography, Dye Penetrant Tests
- Lecture 54 - Tool Condition Monitoring
- Lecture 55 - Experimental Modal Analysis
- Lecture 56 - Introduction to Failure Analysis
- Lecture 57 - Railway Locomotive Noise and Vibration Monitoring
- Lecture 58 - Paper Mill Vibration Monitoring
- Lecture 59 - Overview of CBM facilities at IIT Kharagpur
- Lecture 60 - Future of Condition based Monitoring