

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

NPTEL Video Course - Mechanical Engineering - NOC:Failure Analysis and Prevention

Subject Co-ordinator - Dr. D. K. Dwivedi

Co-ordinating Institute - IIT - Roorkee

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

- Lecture 1 - Introduction - Need and scope of failure analysis and prevention
- Lecture 2 - Introduction - Engineering disasters and understanding failures
- Lecture 3 - Fundamental sources of failures - Deficient design - I
- Lecture 4 - Fundamental sources of failures - Deficient design - II
- Lecture 5 - Fundamental sources of failures - Deficient design - III and upgrading of a part
- Lecture 6 - Fundamental sources of failures - Imperfections in base metals
- Lecture 7 - Fundamental sources of failures - Improper Manufacturing - I
- Lecture 8 - Fundamental sources of failures - Improper Manufacturing - II
- Lecture 9 - Fundamental sources of failures - Improper Manufacturing - III
- Lecture 10 - Fundamental sources of failures - Improper Manufacturing - IV and improper service conditions
- Lecture 11 - Fundamental sources of failures - Poor assembly, service and maintenance
- Lecture 12 - Industrial engineering tool for failure analysis - Pareto diagram
- Lecture 13 - Industrial engineering tool for failure analysis - Fishbone diagram and FMEA
- Lecture 14 - Industrial engineering tool for failure analysis - FMEA
- Lecture 15 - Industrial engineering tool for failure analysis - Fault tree analysis
- Lecture 16 - Industrial engineering tool for failure analysis - Reliability - I
- Lecture 17 - Industrial engineering tool for failure analysis - Reliability - II
- Lecture 18 - General procedure of failure analysis - Steps
- Lecture 19 - General procedure of failure analysis - Background information collection
- Lecture 20 - General procedure of failure analysis - Preliminary examination
- Lecture 21 - General procedure of failure analysis - NDT for failure analysis
- Lecture 22 - General procedure of failure analysis - Destructive testing
- Lecture 23 - General procedure of failure analysis - DT, selection, preservation, cleaning and sectioning of
- Lecture 24 - General procedure of failure analysis - Macroscopy of fracture surfaces - I
- Lecture 25 - General procedure of failure analysis - Macroscopy of fracture surfaces - II
- Lecture 26 - General procedure of failure analysis - Macroscopy of fracture surfaces - III
- Lecture 27 - General procedure of failure analysis - Macroscopy of fracture surfaces - IV
- Lecture 28 - General procedure of failure analysis - Microscopy of fracture surfaces
- Lecture 29 - General procedure of failure analysis - Metallography of failed components

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- Lecture 30 - General procedure of failure analysis - Determination of type of fracture - I
- Lecture 31 - General procedure of failure analysis - Determination of type of fracture - II
- Lecture 32 - General procedure of failure analysis - Determination of type of fracture - III and chemical ana
- Lecture 33 - General procedure of failure analysis - Application of fracture mechanics - I
- Lecture 34 - General procedure of failure analysis - Application of fracture mechanics - II
- Lecture 35 - General procedure of failure analysis - Simulated test service conditions and analysis of eviden
- Lecture 36 - General procedure of failure analysis - Question for analysis
- Lecture 37 - General procedure of failure analysis - Reporting failure analysis and failure analysis of weld
- Lecture 38 - General procedure of failure analysis - Failure analysis of weld joint
- Lecture 39 - General procedure of failure analysis - Examples of failure analysis
- Lecture 40 - General procedure of failure analysis - Embrittlement of steels