

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

NPTEL Video Course - Mechanical Engineering - NOC:Product Engineering and Design Thinking

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Co-ordinating Institute - IIT - Kharagpur

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

- Lecture 1 - Introduction to product engineering
- Lecture 2 - Introduction to Product design
- Lecture 3 - Introduction to Design Thinking
- Lecture 4 - Conceptual Design
- Lecture 5 - Design Planning and Innovation Engineering
- Lecture 6 - FFE Interface with HLD and DT
- Lecture 7 - High Level Design in the Context of Front End Innovation
- Lecture 8 - Functional and Physical Decomposition and QFD
- Lecture 9 - Product Design Specification
- Lecture 10 - FAST in Functional Design
- Lecture 11 - Design Thinking and Product Conceptualization and Development
- Lecture 12 - Product specification and related methods
- Lecture 13 - Conceptual design stemmed from Idea generation
- Lecture 14 - Conceptual design: tools and techniques
- Lecture 15 - Quality Function Deployment (QFD): Example
- Lecture 16 - Kano Model and Analysis
- Lecture 17 - Concept Generation methods
- Lecture 18 - Concept evaluation methods
- Lecture 19 - Concept testing methods
- Lecture 20 - Morphological Design Concept
- Lecture 21 - Embodiment, Architectural, Configuration, and Parametric Design
- Lecture 22 - Pugh Method (Concept Selection leading to Embodiment Design)
- Lecture 23 - Introduction to Sustainability
- Lecture 24 - Sustainability and Eco-design
- Lecture 25 - LCA and design thinking on LCA
- Lecture 26 - Introduction to Additive Manufacturing
- Lecture 27 - Design for Rapid prototyping, DFAM
- Lecture 28 - Introduction to Design for Manufacturing (DFM) and Assembly (DFA)
- Lecture 29 - Rapid: Digital Prototyping

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- Lecture 30 - A Primer on Design for Quality: Robust and Reliability Engineering
- Lecture 31 - Tolerance Design: Taguchi Robust Engineering
- Lecture 32 - Complexity Mitigation in Multidisciplinary, System: Concurrent Engineering Precepts
- Lecture 33 - Design Thinking steps
- Lecture 34 - Design Thinking Methodologies and Tools
- Lecture 35 - Frugal Engineering-A Disruptive Innovation Paradigm in Product Design and Development
- Lecture 36 - Design-Driven Innovation
- Lecture 37 - User interface and Experience (UI/UX) Design in Product Engineering
- Lecture 38 - Industrial Design: Aesthetics and Ergonomics
- Lecture 39 - Design Thinking in Industrial Design - Case Studies
- Lecture 40 - Product Engineering'- Led Technology Entrepreneurship