

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

NPTEL Video Course - Mechanical Engineering - NOC:Automation in Manufacturing

Subject Co-ordinator - Dr. Shrikrishna N. Joshi

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Basic concepts
Lecture 2 - Mechatronics
Lecture 3 - Mechatronics based systems
Lecture 4 - Automated systems and equipment used in manufacturing - Part I
Lecture 5 - Automated systems and equipment used in manufacturing - Part II
Lecture 6 - Selection of electrical and electronics components for mechatronics based systems
Lecture 7 - Terms related to performance of electro-mechanical systems
Lecture 8 - Computer aided design of components
Lecture 9 - Fabrication Processes
Lecture 10 - Measurement system and potentiometer sensors
Lecture 11 - Displacement, position and proximity sensors - I
Lecture 12 - Displacement, position and proximity sensors - II
Lecture 13 - Fluid flow, pressure, and temperature measurement
Lecture 14 - Signal Conditioning
Lecture 15 - Pulse modulation, Protection devices, and Wheatstone bridge
Lecture 16 - Signal conversion
Lecture 17 - Microprocessor Technology
Lecture 18 - Introduction to Microprocessor Programming
Lecture 19 - Application of electric drives in automation
Lecture 20 - DC and AC motors
Lecture 21 - Stepper motor and servo motor
Lecture 22 - Types of industrial automation and mechanisms
Lecture 23 - Ball screw based linear motion drives
Lecture 24 - Application of cams in automation
Lecture 25 - Application of indexing mechanisms in automation
Lecture 26 - Application of tool magazines in automation
Lecture 27 - Material handling systems
Lecture 28 - Fundamental concepts
Lecture 29 - Hydraulic pumps

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- Lecture 30 - Direction control valves
- Lecture 31 - Flow control and pressure relief valves
- Lecture 32 - Graphical representation of hydraulic system elements
- Lecture 33 - Basic concepts and air compressors
- Lecture 34 - Air treatment and pressure regulation
- Lecture 35 - Graphical representation and pneumatic circuits
- Lecture 36 - Computer aided manufacturing and process planning
- Lecture 37 - CNC machines and interpolation
- Lecture 38 - CNC Programming