NPTEL Video Course - Electrical Engineering - Industrial Automation and Control

Subject Co-ordinator - Prof. S. Sen, Prof. S. Mukhopadhyay

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Introduction
Lecture 2 - Architecture of Industrial Automation Systems
Lecture 3 - Measurement Systems Characteristics
Lecture 4 - Temperature Measurement
Lecture 5 - Pressure, Force and Torque Sensors
Lecture 6 - Motion Sensing
Lecture 7 - Flow Measurement
Lecture 8 - Signal Conditioning
Lecture 9 - Signal Conditioning (Continued.)
Lecture 10 - Data Acquisition Systems
Lecture 11 - Introduction to Automatic Control
Lecture 12 - P-I-D Control
Lecture 13 - PID Control Tuning
Lecture 14 - Feedforward Control Ratio Control
Lecture 15 - Time Delay Systems and Inverse Response Systems
Lecture 16 - Special Control Structures
Lecture 17 - Concluding Lesson on Process Control
Lecture 18 - Introduction to Sequence Control, PLC, RLL
Lecture 19 - Sequence Control. Scan Cycle,Simple RLL Programs
Lecture 20 - Sequence Control. More RLL Elements, RLL Syntax
Lecture 21 - A Structured Design Approach to Sequence
Lecture 22 - PLC Hardware Environment
Lecture 23 - Introduction To CNC Machines
Lecture 24 - Contour generation and Motion Control
Lecture 25 - Flow Control Valves
Lecture 26 - Hydraulic Control Systems - I
Lecture 27 - Hydraulic Control Systems - II
Lecture 28 - Industrial Hydraulic Circuit
Lecture 29 - Pneumatic Control Systems - I

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Lecture 30 - Pneumatic Systems - II
Lecture 31 - Energy Savings with Variable Speed Drives
Lecture 32 - DC Motor Drives
Lecture 33 - DC and BLDC Servo Drives
Lecture 34 - Induction Motor Drives
Lecture 35 - Step Motor Drives BLDC Drives
Lecture 36 - Embedded Systems
Lecture 37 - The Fieldbus Network - I
Lecture 38 - The Fieldbus Network - II
Lecture 39 - Higher Level Automation Systems
Lecture 40 - Course Review and Conclusion
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