IC[illegible] Industrial Automation and Control

Unit I

Introduction to industrial automation and control, architecture, introduction to sensors, types of measurement systems, signal conditioning and processing, estimation of errors and calibration.

Unit II

Introduction to process control, PID control, controller tuning, implementation of PID controllers, special control structures.

Unit III

Sequence Control, Control of machine tools

Unit IV

Introduction to actuators, hydraulic actuator systems, pneumatic control systems, electric drives, stepper motors, DC motor drives, induction motor drives, synchronous motor drives.

Unit V

Networking of sensors, actuators and controllers, the Fieldbus Communication Protocol

Reference Books:

1. Curtis D.Johnson, "Process Control Instrumentation Technology", 7th Edition,Prentice Hall, New Delhi,2002

2. Stephanopoulos, "Chemical process control, 2nd Edition, Prentice Hall, New Delhi, 2003.

3.John.W.Webb Ronald A Reis, "Programmable Logic Controllers- Principles And Applications", 4th Edition, Prentice Hall Inc., New Jersey, 1998.

4. Anthony Eposito, "Fluid power with Applications", 6th impression Prentice Hall International Inc, 2009.

5. Deshpande P.B and Ash R.H, "Elements of Process Control Applications", ISA Press, New York, 1995.

6. NPTEL Industrial Automation and Control – Video Course

Senate

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