

SYLLABUS :-

Benefits and Impact of Automation on Manufacturing and Process Industries; Architecture of Industrial Automation Systems; Process Control: P-I-D Control, Controller Tuning, Special Control Structures: Feedforward and Ratio Control, Predictive Control, Control of Systems with Inverse Response, Cascade Control, Advanced Control Schemes. Process and Instrumentation Diagrams; Sequence Control: PLCs and Relay Ladder Logic, Scan Cycle, RLL Syntax, Structured Design Approach, Advanced RLL Programming, Hardware environment; Control of Machine tools: Introduction to CNC Machines, Analysis of a control loop ; Flow Control Valves ; Hydraulic Actuator Systems : Components, Proportional and Servo Valves; Pneumatic Control Systems : System Components, Controllers ; Electric Drives : Energy Saving with adjustable Speed Drives, AC and DC Adjustable Speed Drives, Step motor Drives, Servo Drives ; Communication and Networking of Sensors, Actuators and Controllers; Supervisory Production Control and Management Systems ; Integration with Management and Enterprise Systems