

IV Year - I Semester

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MECHATRONICS LAB

Course Outcomes: At the end of the course, the student will be able to:

- 1 Measure load, displacement and temperature using analogue and digital sensors.
- 2 Develop PLC programs for control of traffic lights, water level, lifts and conveyor belts.
- 3 Simulate and analyse PID controllers for a physical system using MATLAB.
- 4 Develop pneumatic and hydraulic circuits using Automaton studio.

List of Experiments

1. DYNA 1750 Transducers Kit :-
 - a. Characteristics of LVDT
 - b. Principle & Characteristics of Strain Gauge
 - c. Characteristics of Summing Amplifier
 - d. Characteristics of Reflective Opto Transducer
2. PLC PROGRAMMING
 - a. Ladder programming on Logic gates ,Timers & counters
 - b. Ladder Programming for digital & Analogy sensors
 - c. Ladder programming for Traffic Light control, Water level control and Lift control Modules
3. AUTOMATION STUDIO software
 - a. Introduction to Automation studio & its control
 - b. Draw & Simulate the Hydraulic circuit for series & parallel cylinders connection
 - c. Draw & Simulate Meter-in, Meter-out and hydraulic press and clamping.
4. MATLAB Programming
 - a. Sample programmes on Matlab
 - b. Simulation and analysis of PID controller using SIMULINK