RO8611 AUTOMATION SYSTEM DESIGN LABORATORY

DETAILED SYLLABUS

OBJECTIVES:

- To illustrate the design and simulation of multiple actuator systems using pneumatic, electro-pneumatic and PLCs and enable the students to integrate various fringe conditions in multiple actuator systems.
- To design a system using PNEUMOSIM software
- To design a Microcontroller kit with stepper motor and drive circuit using LABVIEW software
- To expose the students in sensors/actuators interfaced with computers.
- To design a circuit using stepper motor

LIST OF EXPERIMENTS:

1. Co-ordinated motion of multiple pneumatic actuators in a desired sequence using Cascade method

2. Integration of fringe condition modules in multiple actuator pneumatic systems

3. Co-ordinated motion of multiple actuator, electro – pneumatic systems in a desired sequence using hard – wire programmed control systems

4. Co-ordinated motion of multiple actuator, electro – pneumatic systems in a desired sequence using PLC.

5. Interfacing of an LVDT with a PC for monitoring the displacement of machine slide and raising an alarm if the displacement exceeds specified limit.

6. Inspection using Machine vision System

7. Control of speed, direction and number of revolutions of a stepper motor using PC.

8. Development of an obstacle avoidance robot using servo motors, ultrasonic and touch sensors.