Mechatronics and Robotics Laboratory			
Hours/Week L-T-P :	0-0-3	Credits:	1.5
Course Type :	Advanced Competency Course- Lab	Course Code:	MS2507

Course Objectives:

To impart knowledge on

1. Fundamentals of fluid power and Mechatronics and primary actuating systems.
2. Programming skills in Programmable logic controllers.
3. Principles of pneumatics and hydraulics and apply them to real life problems.

Course Outcomes:

After completing the course, the student will be able to

CO1 Apply Boolean algebra for logic design of pneumatic circuits.

CO2 Apply Boolean algebra for logic design for hydraulic circuits.

CO3 Build logic circuits for industrial applications.

CO4 Build cascade circuits, automation circuits with PLC for industrial problems, robot movements.

List of experiments: (Any 7)

1. Standard Fluid Power Symbols.
2. Basic Pneumatic Logic Circuits.
3. Pneumatic Circuit for Material Handling System.
4. Electro pneumatic circuit using Relay, Limit Switch and solenoid Valves.
5. Electro-pneumatic circuit for an Automation of Double Acting Cylinder by using proximity Sensors and Cascade System of sequence A+B+ C+ A- B- C
6. Electro –Hydraulic circuit using proximity Sensors.
7. PLC controlled pneumatic Logic circuits
8. PLC controlled pneumatic circuit for Material Handling system
9. Control of Fanuc robot.
10. Robot programming for pick and place application.
11. Assembly and disassembly of PLC controlled based mobile robot.
12. Programming for interfacing of sensors.

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	1	1	2	1	1	1	2	3	2	2
CO2	2	1	1	1	-	1	1	2	3	2	1	1	2	2	2
CO3	3	2	2	2	-	2	1	2	2	1	1	1	2	2	1
CO4	2	1	1	2	-	2	1	1	2	2	1	2	2	2	1