

SEMESTER Seventh	DEPARTMENT Control Engineering	COURSE TITLE Mechatronics
COURSE CODE EC702	HOURS 3 UNITS 3	COURSE SPECIFICATIONS Practical Content

1. Mechanical and Electrical components of Mechatronics:

- Design and testing of the following circuits:
 - Pressure control valves.
 - Flow control valves.
 - Directional control valves.
- Design of circuits with logic sequence using Electro pneumatic trainer kits.
- Simulation of basic hydraulics, pneumatic and electric circuits using software.

2. Sensors and Actuators

- Circuits with multiple cylinder sequences in Electro pneumatic using PLC
- Speed measurement using Inductive pickup/Proximity sensor.
- Temperature measurement using thermocouple, thermistor and RTD.

3. Interfacing Circuits:

- Servo controller interfacing i) open loop ii) closed loop
- PID controller interfacing
- Computer controlled relays, solenoids and DC motors

4. Mechatronic Systems

- Modeling and analysis of basic electrical, hydraulic and pneumatic systems using software such as LabView.