

<b>SEMESTER</b> <i>Seventh</i>	<b>DEPARTMENT</b> <i>Control Engineering</i>	<b>COURSE TITLE</b> <i>Mechatronics</i>
<b>COURSE CODE</b> <i>EC702</i>	<b>HOURS 3</b> <b>UNITS 3</b>	<b>COURSE SPECIFICATIONS</b> <i>Practical Content</i>
<b>1. Mechanical and Electrical components of Mechatronics:</b> <ul style="list-style-type: none"> <li>➤ Design and testing of the following circuits:                             <ul style="list-style-type: none"> <li>○ Pressure control valves.</li> <li>○ Flow control valves.</li> <li>○ Directional control valves.</li> </ul> </li> <li>➤ Design of circuits with logic sequence using Electro pneumatic trainer kits.</li> <li>➤ Simulation of basic hydraulics, pneumatic and electric circuits using software.</li> </ul>		
<b>2. Sensors and Actuators</b> <ul style="list-style-type: none"> <li>➤ Circuits with multiple cylinder sequences in Electro pneumatic using PLC</li> <li>➤ Speed measurement using Inductive pickup/Proximity sensor.</li> <li>➤ Temperature measurement using thermocouple, thermistor and RTD.</li> </ul>		
<b>3. Interfacing Circuits:</b> <ul style="list-style-type: none"> <li>➤ Servo controller interfacing i) open loop ii) closed loop</li> <li>➤ PID controller interfacing</li> <li>➤ Computer controlled relays, solenoids and DC motors</li> </ul>		
<b>4. Mechatronic Systems</b> <ul style="list-style-type: none"> <li>➤ Modeling and analysis of basic electrical, hydraulic and pneumatic systems using software such as LabView.</li> </ul>		