LESSON PLAN

Subject Name- Mechatronics	Branch- Production Engineering
Subject Code- BPEOE503	Semester- 5th, B.Tech

S/N	Module	Topic(s)	Period/ Hours
1	I	Introduction to Mechatronics: Mechatronic system, measurement systems,	1
2.	I	control systems and response of systems, Open and Closed loop System,	2
3.	I	Transfer Function,	3
4.	I	Sequential Controller, Microprocessor based controller.	4
5.	I	Basic System models: Mathematical models, Introduction to Mechanical,	5
6.	I	Electrical, Fluid and Thermal systems,	6
7.	I	Rotational and Transnational systems,	7
8.	I	Electro-Mechanical, Hydraulic- Mechanical systems.	8-9
9.	II	Sensors: Desirable features, Displacement, position and proximity sensors,	10-11
10.		Velocity, motion and Force sensors,	12-13
11.	II	Time of flight sensors, Binary force sensor,	14-15
12.	II	Temperature and Pressure measurement, Sensor selection.	16-17
13.	III	Actuation Systems: Actuation Systems,	18-19
14.	III	Pneumatic and Hydraulic systems, Directional control valves,	20
15.	III	Rotary actuator, Mechanical actuation systems- Mechanical Systems,	21
16.	III	Electrical Actuation Systems- Electrical Systems,	22
17.	III	Relays and Solenoids, DC brushed motors, DC brushless motors,	23-24
18.	III	DC servo motors, Stepper Motors. Drive selection.	25
19.	IV	Microcontrollers: 8051 Microcontroller,	26-27

S/N	Module	Topic(s)	Period/Hours
20.	**IV**	Microprocessor structure,	28-29
21.	**IV**	Digital Interfacing,	30
22.	**IV**	Analog Interfacing, Applications	31-32
23.	**IV**	Programming- Assembly/ C (LED Blinking, Controlling a stepper motor).	33-34
24.	**V**	Interfacing: Interfacing microcontrollers with general purpose three-state transistors,	35
25.	**V**	interfacing relays, Interfacing solenoids,	36
26.	**V**	Interfacing stepper motor,	37
27.	**V**	Interfacing with sensors,	38-40
28.	**V**	Interfacing with RS 232 and RS485	38-40