

**UTKAL GOURAV MADHUSUDAN INSTITUTE OF TECHNOLOGY, RAYAGADA**  
**Academic Lesson Plan for Winter Semester- 2022**

Name of the Teaching Faculty: Er. Sagar Jena  
 Semester: 5th  
 No. of Periods per Week: 4  
 End Semester Exam: 80  
 Total Marks: 100

Department: Mechanical Engineering  
 Subject: MECHATRONICS  
 Total Periods: 60  
 Class Test: 20  
 Theory - 4

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	Definition of Mechatronics
2.		2 <sup>nd</sup>	Advantages & disadvantages of Mechatronics
3.		3 <sup>rd</sup>	Application of Mechatronics
4.		4 <sup>th</sup>	Scope of Mechatronics in Industrial Sector
5.	2 <sup>nd</sup>	1 <sup>st</sup>	Components of a Mechatronics System, Importance of Mechatronics in automation
6.		2 <sup>nd</sup>	Defination of Transducers
7.		3 <sup>rd</sup>	Classification of Transducers
8.		4 <sup>th</sup>	Electromechanical Transducers
9.	3 <sup>rd</sup>	1 <sup>st</sup>	Transducers Actuating Mechanisms
10.		2 <sup>nd</sup>	Do
11.		3 <sup>rd</sup>	Displacement & Positions Sensors
12.		4 <sup>th</sup>	Do
13.	4 <sup>th</sup>	1 <sup>st</sup>	Velocity, motion, force and pressure sensors.
14.		2 <sup>nd</sup>	Do
15.		3 <sup>rd</sup>	Temperature and light sensors
16.		4 <sup>th</sup>	Mechanical Actuators
17.	5 <sup>th</sup>	1 <sup>st</sup>	Do
18.		2 <sup>nd</sup>	Do
19.		3 <sup>rd</sup>	Do
20.		4 <sup>th</sup>	Electrical Actuator
21.	6 <sup>th</sup>	1 <sup>st</sup>	Do
22.		2 <sup>nd</sup>	Do
23.		3 <sup>rd</sup>	Do
24.		4 <sup>th</sup>	Do
25.	7 <sup>th</sup>	1 <sup>st</sup>	Do
26.		2 <sup>nd</sup>	Introduction to PLC
27.		3 <sup>rd</sup>	Do
28.		4 <sup>th</sup>	Advantages of PLC
29.	8 <sup>th</sup>	1 <sup>st</sup>	Do
30.		2 <sup>nd</sup>	Selection and uses of PLC
31.		3 <sup>rd</sup>	Do
32.		4 <sup>th</sup>	Architecture basic internal structures

33.	9 <sup>th</sup>	1 <sup>st</sup>	Do
34.		2 <sup>nd</sup>	Input/output Processing and Programming
35.		3 <sup>rd</sup>	Do
36.		4 <sup>th</sup>	Do
37.	10 <sup>th</sup>	1 <sup>st</sup>	Mnemonics
38.		2 <sup>nd</sup>	Do
39.		3 <sup>rd</sup>	Master and Jump Controllers
40.		4 <sup>th</sup>	Do
41.	11 <sup>th</sup>	1 <sup>st</sup>	Introduction to Numerical Control of machines and CAD/CAM
42.		2 <sup>nd</sup>	Do
43.		3 <sup>rd</sup>	Do
44.		4 <sup>th</sup>	About CAD/CAM
45.	12 <sup>th</sup>	1 <sup>st</sup>	Do
46.		2 <sup>nd</sup>	Do
47.		3 <sup>rd</sup>	Do
48.		4 <sup>th</sup>	Do
49.	13 <sup>th</sup>	1 <sup>st</sup>	elements of CNC machines
50.		2 <sup>nd</sup>	Do
51.		3 <sup>rd</sup>	Do
52.		4 <sup>th</sup>	Do
53.	14 <sup>th</sup>	1 <sup>st</sup>	Do
54.		2 <sup>nd</sup>	Do
55.		3 <sup>rd</sup>	Do
56.		4 <sup>th</sup>	Definition, Function and laws of robotics
57.	15 <sup>th</sup>	1 <sup>st</sup>	Types of industrial robots
58.		2 <sup>nd</sup>	Do
59.		3 <sup>rd</sup>	Robotic systems
<b>60.</b>		4 <sup>th</sup>	Advantages and Disadvantages of robots

The above lesson plan prepared by the concerned faculty.

**Er. Sagar Kumar Jena**

**PTGF, MECHANICAL DEPARTMENT**