

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**  
**DEPARTMENT OF MECHANICAL ENGINEERING**



**LESSON PLAN**

**SUBJECT: MECHATRONICS (TH 4)**  
**FACULTY: Er. Prabir Ku. Swain**

*Prabir Kumar Swain,*

**ACCADEMIC SESSION: 2024-25**  
**SEMESTER: 5<sup>TH</sup>**  
**SEC: B**

Sd/-

**H.O.D (MECH. Engg.)**

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Discipline: Mechanical Engineering Subject: Mechatronics		Semester: 5 <sup>th</sup> B		Name of the teaching faculty: Er. PRABIR KUMAR SWAIN	
No. of Days/ per week class allotted: 04periods per week (Mon-1 period, Thu-1 period, Fri-1 period, Sat -1 period)				Semester From Date: 01-08-2024 To Date: 11-11-2024 No. of weeks: 19 weeks	
Week	Class Day	No of period available	Theory Topics		
1ST	04-JUL-2024	1	<b>1.0 INTRODUCTION TO MECHATRONICS</b>		
	05-JUL-2024	1	1.1 Definition of Mechatronics		
	06-JUL-2024	1	1.2 Advantages & disadvantages of Mechatronics.		
	08-JUL-2024	1	1.3 Application of Mechatronics		
	11-JUL-2024	1	1.4 Scope of Mechatronics in Industrial Sector		
2ND	12-JUL-2024	1	1.5 Components of a Mechatronics System		
	13-JUL-2024	1	1.6 Importance of mechatronics in automation		
	15-JUL-2024	1	<b>Previous year semester question discussion</b>		
	18-JUL-2024	1	<b>6.0 ROBOTICS</b>		
3RD	19-JUL-2024	1	6.1 Definition, Function and laws of robotics		
			6.2 Types of industrial robot		
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4TH	20- JUL -2024	1	6.3 Robotic systems	
	22- JUL -2024	1	6.4 Advantages and disadvantages of robots	
	25- JUL -2024	1	Previous year semester question discussion	
	26- JUL -2024	1	CLASS TEST-01	
	27- JUL -2024	1	5.1.2 CNC machines	
	29- JUL -2024	1	5.1.2 CNC machines	
	01-Aug-2024	1	5.1.3.1 CAD	
	02-Aug-2024	1	5.1.3.2 CAM	
	03- Aug -2024	1	5.1.3.4 Functioning of CAD/CAM system	
	05- Aug -2024	1	5.1.3.4 Features and characteristics of CAD/CAM system	
5TH	08- Aug -2024	1	5.1.3.4 Features and characteristics of CAD/CAM system	
	09- Aug -2024	1	5.1.3.5 Application areas for CAD/CAM	
	6TH	10- Aug -2024	1	2. Elements of CNC machines
				5.2.1 Introduction

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7TH	12- Aug -2024	1	5.2.2 Machine Structure
	16- Aug -2024	1	5.2.3 Guideways/Slide ways
	17- Aug -2024	1	5.2.3.2 Factors of design of guideways
<b>No. of Days/ per week class allotted: 04periods per week</b>			
8TH	<b>TUE- 2 P, THU-1P, FRI -1P</b>		
	22- Aug -2024	1	5.2.4 Drives 5.2.4.1 Spindle drives
	23- Aug -2024	1	5.2.4 Drives 5.2.4.1 Spindle drives
	29- Aug -2024	1	5.2.4.2Feed drive 5.2.5 Spindle and Spindle Bearings
09TH	30-Aug-2024	1	5.2.4.2Feed drive 5.2.5 Spindle and Spindle Bearings

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10TH	03-Sep-2024	2	Previous year semester question discussion
	05-Sep-2024	1	CLASS TEST-02
11TH	06-Sep-2024	1	<b>4.0 PROGRAMMABLE LOGIC CONTROLLERS(PLC)</b>
			4.1.Introduction
	2	4.2 Advantages of PLC Selection and uses of PLC	
	10-Sep-2024	2	4.4 Architecture basic internal structures
	12-Sep-2024	1	4.5 Input/output Processing and Programming
	13-Sep-2024	1	4.5 Input/output Processing and Programming
	17-Sep-2024	2	4.5 Input/output Processing and Programming
12TH	19-Sep-2024	1	4.5 Input/output Processing and Programming
	20-Sep-2024	1	4.5 Input/output Processing and Programming
	24-Sep-2024	2	4.6 Mnemonics 4.7 Master and Jump Controllers
13TH	26-Sep-2024	1	Previous year semester question discussion
	27-Sep-2024	1	<b>2.0 SENSORS AND TRANSDUCERS</b> Definition of Transducers



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	01-Oct-2024	2	2.2 Classification of Transducers
	03-Oct-2024	1	2.3 Electromechanical Transducers
14TH	04-Oct-2024	1	2.4 Transducers Actuating Mechanisms
	15-Oct-2024	2	2.5 Displacement & Positions Sensors
	17-Oct-2024	1	2.6 Velocity, motion, force and pressure sensors 2.7 Temperature and light sensors
			<b>3.0 ACTUATORS-MECHANICAL, ELECTRICAL</b>
			3.1 Mechanical Actuators
15TH	18-Oct-2024	1	3.1.1 Machine, Kinematic Link, Kinematic Pair
	22-Oct-2024	2	3.1.2 Mechanism, Slider crank Mechanism
	24-Oct-2024	1	3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
16TH	25-Oct-2024	1	3.1.4 Belt & Belt drive
	29-Oct-2024	2	3.2 Electrical Actuator
17TH			

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	01-Nov-2024	1	3.2.1 Switches and relay
	05-Nov-2024	1	3.2.2 Solenoid.
18TH	07-Nov-2024	1	3.2.3 D.C Motors
	08-Nov-2024	1	3.2.4 A.C Motors
			3.2.6 Specification and control of stepper motors
	11-Nov-2024	1	3.2.6 Specification and control of stepper motors
	14-Nov-2024	1	3.2.7 Servo Motors D.C & A.C
19TH			REVISION
		1	REVISION
		1	REVISION

