

Discipline: Mechanical	Semester: 5 th	Name of the Teaching Faculty: Bhagyashree Panda	
Subject: Mechatronics	No of Days/Week Class Allotted: 4	Semester From date: 15/09/22 To date: 21/01/23	No. of Weeks:

WEEK	Class Day	Theory Topics
1	1st	Definition of mechatronics
	2nd	Advantage and dis-advantages of mechatronics
	3rd	Application of mechatronics
	4th	Scope of mechatronics in industrial sector
	5th	
2	1st	Components of a mechatronic system
	2nd	Importance of mechatronics in automation
	3rd	Definition of transducer
	4th	Classification of transducers.
	5th	
3	1st	Electromechanical transducers
	2nd	Transducers actuating mechanism
	3rd	Displacement & position sensors
	4th	Velocity, motion, force & pressure sensors.
	5th	

Theory Topics

WEEK	Class Day	Theory Topics
4	1st	Temperature & light sensors
	2nd	Mechanical actuators
	3rd	Machine, Kinematic link, Kinematic pair
	4th	Mechanism
	5th	
5	1st	Slider crank mechanism
	2nd	Gear drive, spur gear, bevel gear, helical gear, worm gear
	3rd	Belt & belt drive
	4th	Bearings
	5th	
6	1st	Electrical actuators
	2nd	Switches & relay
	3rd	Solenoid
	4th	D.C motors
	5th	

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WEEK	Class Day	Theory Topics
7	1st	A.C motors
	2nd	Stepper motor
	3rd	Specification & control of stepper motor
	4th	Servo motor D.C & A.C
	5th	
8	1st	Programmable logic control (PLC)
	2nd	Introduction to PLC
	3rd	Advantages of PLC
	4th	Selection & uses of PLC
	5th	
9	1st	Architecture basic internal structures.
	2nd	I/p o/p processing & programming
	3rd	Mnemonic
	4th	Master & jump controllers
	5th	

Theory Topics

WEEK	Class Day	Theory Topics
10	1st	Introduction to numerical control of machines & CAD/CAM:-
	2nd	NC machines
	3rd	CNC machines
	4th	CAD/CAM
	5th	
11	1st	CAD
	2nd	CAM
	3rd	Software & hardwares for CAD/CAM
	4th	Functioning of CAD/CAM system
	5th	
12	1st	Features & characteristics of CAD/CAM systems
	2nd	Application areas for CAD/CAM
	3rd	Elements of CNC machines
	4th	Introduction and machine structure
	5th	

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WEEK	Class Day	Theory Topics
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13	1st	Guideways / Slide ways
	2nd	Introduction to type of guideways
	3rd	Factors of design of guideways
	4th	Drives
	5th	

14	1st	Spindle drive,
	2nd	Feed drive
	3rd	Spindle & spindle bearings
	4th	Revision of all above topics
	5th	

15	1st	Definition, function & laws of robotics.
	2nd	Types of Industrial robots.
	3rd	Robotic systems
	4th	Advantage & dis-advantages of robots
	5th	Satyam Ashank