

Badriprasad Institute of Technology, Sambalpur

Lesson plan for Theory -4, Mechatronics

Semester & Branch: 5th Sem. Mechanical Engineering

Name of the Faculty: Mr. Paresh Pradhan

Total Periods- 60

No of periods /week- 4

Week	Day	Topic
1st	1st	Mechatronics and its definition
	2nd	Advantages & disadvantages of Mechatronics
	3rd	Application of Mechatronics, Scope of Mechatronics in Industrial Sector
	4th	Components of a Mechatronics System
2nd	5th	Importance of mechatronics in automation
	6th	Definition of Transducers, Classification of Transducers...continue
	7th	Classification of Transducers, Electromechanical Transducers
	8th	Transducers Actuating Mechanisms
3rd	9th	Displacement & Positions Sensors
	10th	Velocity, motion, force and pressure sensors.
	11th	Temperature and light sensors.
	12th	ACTUATORS-MECHANICAL, ELECTRICAL
4th	13th	Mechanical Actuators
	14th	Machine, Kinematic Link, Kinematic Pair
	15th	Mechanism, Slider crank Mechanism
	16th	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
5th	17th	Belt & Belt drive
	18th	Bearings
	19th	Electrical Actuator
	20th	Switches and relay
6th	21st	Solenoid
	22nd	D.C Motors
	23rd	A.C Motors
	24th	Stepper Motors
7th	25th	Specification and control of stepper motors
	26th	Servo Motors D.C & A.C
	27th	PROGRAMMABLE LOGIC CONTROLLERS(PLC)
	28th	Introduction
8th	29th	Advantages of PLC
	30th	Selection and uses of PLC
	31st	Architecture basic internal structures
	32nd	Input/output Processing and Programming
9th	33rd	Mnemonics
	34th	Master and Jump Controllers
	35th	ELEMENTS OF CNC MACHINES
	36th	Introduction to Numerical Control of machines and CAD/CAM
10th	37th	NC machines
	38th	CNC machines

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	39th	CAD/CAM
	40th	CAD
11th	41st	CAM
	42nd	Software and hardware for CAD/CAM
	43rd	Functioning of CAD/CAM system
	44th	Features and characteristics of CAD/CAM system
	45th	Application areas for CAD/CAM
12th	46th	Elements of CNC machines
	47th	Introduction
	48th	Machine Structure
	49th	Guideways/Slide ways
13th	50th	Introduction and Types of Guideways
	51st	Factors of design of guideways
	52nd	Drives
	53rd	Spindle drives
14th	54th	Feed drive
	55th	Spindle and Spindle Bearings
	56th	ROBOTICS: Definition, Function and laws of robotics
	57th	Types of industrial robots
15th	58th	Robotic systems
	59th	Advantages and Disadvantages of robots
	60th	Revision and doubt class

Sign of Faculty

Sign of HOD