Lesson Plan on

(TH-4) MECHATRONICS

(5th sem)

Prepared by

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Discipline:ME CHANICAL ENGG	Semester: **5TH**	Name of the Teaching Faculty: **MR MILAN NARENDRA, PTGF IN MECH.ENGG.**
Subject:MECHA TRONICS	No. ofdays/per week class allotted:**04**	Semester From date: **01.10.2021** To Date:**08.01.2022** No.of Weeks:**15**
PRE-REQUISITE	Basic knowledge about Link & Mechanism, Lathe machine.	
COURSE OUTCOMES	**CO1:**Study the definition and elements of mechatronics system. **CO2:**Learn how to apply the principle of mechatronics for the development of productive systems. **CO3:**Defining different type of system and Sensors and solve the simple problems. **CO4:**Explain the concept of Mechanical actuation, Electrical actuation and solve the simple problems. **CO5:** Learn the Industrial robotics.	

Week	Class Day	Theory/Practical Topics	DELIVERY METHOD
1ST	1ST	Definition of Mechatronics	Whiteboard
	2ND	Advantages & disadvantages of Mechatronics	Whiteboard
	3RD	Application of Mechatronics	Whiteboard
	4TH	Scope of Mechatronics in Industrial Sector	Whiteboard
2ND	1ST	Components of a Mechatronics System	Whiteboard
	2ND	Importance of mechatronics in automation	Whiteboard
	3RD	**QUIZ&ASSIGNMENT-I**	Google Forms
	4TH	Definition of Transducers	Whiteboard
3RD	1ST	Classification of Transducers	Whiteboard
	2ND	Electromechanical Transducers	Whiteboard
	3RD	Electromechanical Transducers	Whiteboard
	4TH	Transducers Actuating Mechanisms	Whiteboard
4TH	1ST	Transducers Actuating Mechanisms	Whiteboard
	2ND	Displacement &Positions Sensors	Whiteboard
	3RD	Velocity, motion, force and pressure sensors	Whiteboard
	4TH	Temperature and light sensors.	Whiteboard
5TH	1ST	ACTUATORS-MECHANICAL, ELECTRICAL	Whiteboard
	2ND	Machine, Kinematic Link, Kinematic Pair	Whiteboard
	3RD	Mechanism, Slider crank Mechanism	PPT
	4TH	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear	Whiteboard
6TH	1ST	Belt & Belt drive	Whiteboard
	2ND	Bearings	Whiteboard
	3RD	**QUIZ&ASSIGNMENT-II**	Google Forms
	4TH	Switches and relay	Whiteboard
7TH	1ST	Solenoid	Whiteboard
	2ND	D.C Motors	Whiteboard
	3RD	A.C Motors	Whiteboard
	4TH	Stepper Motors, Specification and control of stepper motors, Servo Motors D.C & A.C	Whiteboard
8TH	1ST	PROGRAMMABLE LOGIC CONTROLLERS(PLC)	Whiteboard

	2ND	Introduction, Advantages of PLC, Selection and uses of PLC	Whiteboard
	3RD	Architecture basic internal structures, Input/output Processing and Programming, Mnemonics, Master and Jump Controllers	Whiteboard
	4TH	Introduction to Numerical Control of machines and CAD/CAM, NC machines, CNC machines, CAD/CAM, Software and hardware for CAD/CAM, Functioning of CAD/CAM system	PPT
9TH	1ST	Features and characteristics of CAD/CAM system	Whiteboard
	2ND	Application areas for CAD/CAM	Whiteboard
	3RD	Elements of CNC machines, Machine Structure, Guideways/Slide ways	Whiteboard
	4TH	**QUIZ&ASSIGNMENT-III**	Google Forms
10TH	1ST	Drives, Spindle drives, Feed drive	Whiteboard
	2ND	Spindle and Spindle Bearings	Whiteboard
	3RD	**ROBOTICS**	Whiteboard
	4TH	Definition, Function and laws of robotics	Whiteboard
11TH	1ST	Definition, Function and laws of robotics	Whiteboard
	2ND	Types of industrial robots	Whiteboard
	3RD	**QUIZ&ASSIGNMENT-IV**	Google Forms
	4TH	Types of industrial robots	Whiteboard
12TH	1ST	Robotic systems	PPT
	2ND	Advantages and Disadvantages of robots	Whiteboard
	3RD	Advantages and Disadvantages of robots	Whiteboard
	4TH	Problemsolving	Whiteboard
13TH	1ST	Problemsolving	Whiteboard
	2ND	Problemsolving	Whiteboard
	3RD	Problemsolving	Whiteboard
	4TH	**QUIZ&ASSIGNMENT-V**	Google Forms
14TH	1ST	REVISION	
	2ND	REVISION	
	3RD	REVISION	
	4TH	REVISION	
15TH	1ST	REVISION	
	2ND	REVISION	
	3RD	REVISION	
	4TH	REVISION	

LEARNINGRESOUCES:

01. ATextBook ofMechatronics by RKRajput, SChand Publisher.
02. Mechatronics by W. Bolton, Pearson Education Ind.
03. CAD/CAM by R. Radhakrishna, S. Subramanian, New Age International Pvt Ltd.
04. CAD/CAM by Mikell Grover.

WEBSITERESOUCES:

01. https://www.youtube.com/watch?v=zVVITxiec7g&list=PLLy_2iUCG87BNHXRb6L2pWEpMcLoFaY_U
02. https://www.youtube.com/watch?v=v-3TmN4HhLc&list=PLwdnzlV3ogoW31cIPN6Dn6c8Ia-n36vXk)

Milan Nanandara
Sign. of Facultyconcerned
08/10/21

Principal
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