

5TH SEM 01.10.2021-08.01.2022(WINTER)

LESSON PLAN

MECHATRONICS

ER. M.B.BISWAS AND ITA

(AUTOMOBILE ENGG. DEPT)

B.O.S.F., CUTTACK

AUTOMOBILE ENGINEERING DEPARTMENT

VISSION:

To develop competent, disciplined imaginative Automobile engineers, equipped with core competency and technical skills useful to the learning / teaching community and the industrial fraternity.

MISSION:

M1:To provide with operational and technical inputs to get innovative and research ideas in the field of automotive engineering.

M2: To give inputs for higher education with management qualities for the betterment of the society.

M3:Skilling with modern engineering tools necessary to meet and solve engineering problems.

PROGRAM EDUCATIONAL OBJECTIVES

PEO1: To provide technical skills to diagnose and apply the concept of automotive system

PEO2: To prepare to design, fabricate and innovate in automobile sector to face the industrial challenges.

PEO3: To inculcate with good communication skills, ethics and entrepreneurship skills to play the key role in automotive industry.

Discipline:- Automobile Engg.	Semester :- 5TH	Name of the teaching faculty :- M.B.BISWABANDITA
Subject Name :- MECHATRONICS	No. Of Days/Week Class Allotted :- 04 Periods/Week (Tuesday, Wednesday, Friday,Saterday– 1 Period Each)	Semester from Date -01/10/2021 To Date -08/01/2021 No.of Weeks:15
Week	Class Day	Theory topics
1 st	1.10.2021	1.0 Introduction of mechatronics system
2 nd		
	5.10.2021	1.1 Definition of mechatronics
		1.2 Advantages disadvantages of mechatronics systems
	8.10.2021	1.3 Application of mechatronics
		1.4 Scope of mechatronics
		1.5 Components of mechatronics system
	9.10.2021	1.6 Importance of mechatronics system
3 rd		
	11.10.2021 -20.10.21	Druga puja holidays
4 th		CH-2.0 Sensors and transducers
	22.10.2021	2.1definition of transducers and its types
	23.10.2021	2.2 classification of transducers
5 th		
	26.10.2021	2.3 electromechanical transducers
	27.10.2021	2.4 transducer actuating mechanism
	29.10.2021	2.5displacement and position sensor
	30.10.2021	2.6 velocity,motion,force&pressure sensor
6 th		
	2.11.2021	2.7 temprature&light sensor
		3.0 actuators- electrical&mechanical
		3.1 mechanical actuators

	3.11.2021	3.1.1 machine, kinematic, kinematic pair
	04.11.2021	DIWALI/KALIPUJA HOLIDAY
	5.11.2021	3.1.2 slider crank mechanism
	6.11.2021	3.1.3 gear drive, spur bevel, helical, worm gear
	9.11.2021	3.1.4 belt and belt drive & 3.1.5 bearings
		3.2 electrical actuators
	10.11.2021	3.2.1 switches & relay, *****CLASS TEST
	12.11.2021	3.2.2 Solenoid, 3.2.3 DC motor
	13.11.2021	3.2.4 AC motor, & 3.2.5 Stepper motor
	16.11.2021	3.2.6 specification of stepper motor & 3.2.7 DC & AC Servo
		4.0 PLC
	17.11.2021	4.1 introduction to plc & 4.2 advantages of plc
	20.11.2021	4.3 selection and uses of plc
	23.11.2021	4.4 architecture basic internal structures
	24.11.2021	4.5 I/p o/p processing & programming, 4.6 Mnemonics
	26.11.2021	4.7 master & jump control
	27.11.2021	CLASS TEST
		5.0 Elements of CNC M/c
	30.11.2021	5.1 introduction to CNC M/C & CAD/CAM, 5.1.1 NC M/C
	01.12.2021	5.1.2 CNC M/C
	03.12.2021	5.1.3.1 CAD, 5.1.3.2 CAM
	04.12.2021	5.1.3.3 software and hardware for CAD/CAM & 5.1.3.4 Functioning of CAD/CAM
	07.12.2021	5.1.3.5 Features and characteristics of CAD/CAM, 5.1.3.6 Application Area of CAD/CAM.
	08.12.2021	5.2 Elements of CNC Machine, 5.2.1 Introduction to CNC
	10.12.2021	5.2.2 Machine Structure, 5.2.3 Guide wise/Side wise

12 th	11.12.2021	5.2.4 Drives,
	14.12.2021	5.2.4.1 Spindle Drive
	15.12.2021	5.2.4.2 Feed Drive
	17.12.2021	5.2.5 Spindle and Spindle Bearing
	18.12.2021	Assignment Work and Class Test
13 th		CH-6.0 Robotics
	21.12.2021	6.1 Definition, Function & Laws of Robotics
	22.12.2021	6.2 Types of industrial robots
	24.12.2021	Short Type Questions Discussion
14 th		
	28.12.2021	6.3 Robotics system
	29.12.2021	6.4 Advantages & Disadvantages of Robots
	31.12.2021	Different Robotics applications
15 th	01.01.2022	Revision
		Revision
	04.01.2022	Revision
	05.01.2022	VST-1
	07.01.2022	VST-2
	08.01.2022	Doubt clearing classes