

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF AUTOMOBILE ENGINEERING



LESSON PLAN

SUBJECT: MECHATRONICS
FACULTY: M.B. BISWABANDITA

ACCADEMIC SESSION: 2022-23
SEMESTER: 5th

Sd/-
H O D (AutomobileEngg.)

W. Singh

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.

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Discipline:- AutomobileEngg.	Semester:- 5th	Nameofthe teaching faculty:- M. B. Biswabandita
SubjectName:- MECHATRONICS	No.OfDays/WeekClassAllotted :- 04	SemesterfromDate- 15/09/2022 ToDate 24/12/2022 No.of Weeks:- 16
	Periods/Week(Tuesday,Thursday,Friday,Saturday -1PeriodEach)	
Week	ClassDay	Theorytopics
1st	15/09/2022 16/09/2022	IntroductionofMechatronics 1.0 Introductiontomechatronics 1.1 Definitionofmechatronics 1.2 Advantagesanddisadvantagesofmechatronics
2nd	17/09/2022 20/09/2022 22/09/2022 23/09/2022	1.3Applicationofmechatronics 1.4 Scopeofmechatronicsinindustrialsector 1.5 Componentsofamechatronicssystem 1.5 Componentsofamechatronicssystem 1.6 Importanceofmechatronicsinautomation 2.0 Sensorand transducer 2.1 Definitionoftransducer 2.2 Classificationoftransducer
3rd	24/09/2022 27/09/2022 29/09/2022 30/09/2022 01/10/2022	2.3Electromechanicaltransducer 2.4Transduceractuatingmechanism 2.5Displacementandpositionensors 2.6Velocity,motion,forceandpressuresensors 2.7Temperatureandlightsensors
4th	03/10/2022to08/10/2022 11/10/2022	Pujaholiday 3.0 Actuator-mechanical,electrical 3.1 Mechanicalactuator 3.1.1 Machine,kinematiclink,kinematicpair

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	13/10/2022	3.1.1 Machine, kinematic link, kinematic pair 3.1.2 Mechanism, slider crank mechanism
	14/10/2022	3.1.3 Gear drive, spur gear, bevel gear, helical gear, worm gear
	15/10/2022	3.1.4 Belt and belt drive 3.1.5 bearing
5th	18/10/2022	3.2 Electrical actuator 3.2.1 Switch and relay
	20/10/2022	3.2.2 Solenoid
	21/10/2022	3.2.3 D.C. motor 3.2.4 A.C. motor
	22/10/2022	3.2.5 Stepper motors 3.2.6 Specification and control of stepper motors
6th	25/10/2022	3.2.7 Servo Motors D.C. and A.C.
	27/10/2022	CLASSTEST
	28/10/2022	4.0 Programmable logic controllers (PLC) 4.1 Introduction
	29/10/2022	4.2 Advantages of PLC
7th	01/11/2022	4.3 Selection and uses of PLC

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	03/11/2022	4.4 Architecture basic internal structures
	04/11/2022	4.5 Input/output processing and programming Mnemonics
	05/11/2022	4.6 Mnemonics
8th	08/11/2022	HOLIDAY
	10/11/2022	4.7 Master and jump controllers
	11/11/2022	5.0 Elements of CNC machine Introduction to numerical control of machine and CAD/CAM
	12/11/2022	5.1.1 NC machine
	15/11/2022	5.1.2 CNC machine
9th	17/11/2022	5.1.3 CAD/CAM
	18/11/2022	5.1.3.1 CAD
	19/11/2022	5.1.3.2 CAM
	22/11/2022	5.1.3.3 Software and hardware for CAD/CAM
	24/11/2022	5.1.3.4 Functioning of CAD/CAM system
	25/11/2022	5.1.3.5 Application areas for CAD/CAM
10th	26/11/2022	5.2 Elements of CNC machine 5.2.1 Introduction 5.2.2 Machine structure 5.2.3 Guideways/slides 5.2.3.1 Introduction and types of guideways 5.2.3.2 Factors of design of guideways

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11th	29/11/2022	5.2.4 Drives 5.2.4.1 Spindledrives 5.2.4.2Feeddrive
	01/12/2022	5.2.5Spindleandspindlebearing
	02/12/2022	6.0 Robotics
	03/12/2022	6.1 Definition,functionandlawsofrobotics
12th	06/12/2022	6.1Definition,functionandlawsofrobotics
	08/12/2022	6.2Typesofindustrialrobots
	09/12/2022	6.3Roboticsystems
	10/12/2022	6.4Advantagesanddisadvantagesofrobots
13th	13/12/2022	ASSIGNMENTS
	15/12/2022	CLASSTEST
	16/12/2022	DISCUSSION
	17/12/2022	DOUBTCLEARINGCLASS
14th	20/12/2022	CLASS TEST (FULLSYLLABUS)
	22/12/2022	DISCUSSION
	23/12/2022	DOUBTCLEARINGCLASS
	24/12/2022	REVISION