

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF AUTOMOBILE ENGINEERING
LESSON PLAN
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DEPARTMENT OF AUTOMOBILE ENGINEERING



LESSON PLAN

SUBJECT: MECHATRONICS
FACULTY: M.B. BISWABANDITA

ACCADEMIC SESSION: 2023-24 (w)
SEMESTER: 5th

Sd/-


H O D (Automobile Engg.)

AUTOMOBILE ENGINEERING DEPARTMENT

VISION:

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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LESSON PLAN

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 (Monday, Thursday, Friday, Saturday – 1 Period Each)	The semester from Date -01-08-2023 To Date 30-11-2023 No. of Weeks:18
Week	Class Day	Theory topics
1st	03-08-2023	Introduction of Mechatronics
	04-08-2023	1.0 Introduction to Mechatronics 1.1 Definition of mechatronics 1.2 Advantages and disadvantages of mechatronics
	05-08-2023	1.3 Application of Mechatronics
2nd	07-08-2023	1.4 Scope of mechatronics in the industrial sector 1.5 Components of a Mechatronics System
	10-08-2023	1.5 Components of a Mechatronics System 1.6 Importance of mechatronics in automation
	11-08-2023	2.0 Sensor and transducer 2.1 Definition of transducer 2.2 Classification of transducer
	12-08-2023	2.3 Electromechanical transducer
3rd	14-08-2023	2.4 Transducer actuating mechanism
	17-08-2023	2.5 Displacement and Position Sensors
	18-08-2023	2.6 Velocity, motion, force, and pressure sensors
	19-08-2023	2.7 Temperature and light sensors
4th	21-08-2023	Class Test

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	24-08-2023	3.1.1 Machine, kinematic link, kinematic pair 3.1.2 Mechanism, slider crank mechanism
	25-08-2023	3.0 Actuator-mechanical, electrical 3.1 Mechanical actuator
	26-08-2023	3.2 Machine, kinematic link, kinematic pair 3.1.3 Gear drive, spur gear, bevel gear, helical gear, worm gear 3.1.4 Belt and belt drive 3.1.5 bearing
5th	28-08-2023	3.2 Electrical actuator 3.2.1 Switch and relay
	31-08-2023	3.2.2 Solenoid
	01-09-2023	3.2.3 D.C. motor 3.2.4 A.C. motor
	02-09-2023	3.2.5 Stepper motors 3.2.6 Specification and control of stepper motors
6th	04-09-2023	3.2.7 Servo Motors D.C. and A.C.
	07-09-2023	CLASS TEST
	08-09-2023	4.0 Programmable logic controllers(PLC) 4.1 Introduction
	09-09-2023	4.2 Advantages of PLC
7th	11-09-2023	4.3 Selection and uses of PLC

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	14-09-2023	4.4 Architecture basic internal structures
	15-09-2023	4.5 Input/output processing and programming Mnemonics
	16-09-2023	4.6 Mnemonics
8th	18-09-2023	4.7 Master and jump controllers
	21-09-2023	5.0 Elements of CNC machine
	22-09-2023	5.1 Introduction to numerical control of machines and CAD/CAM
	23-09-2023	5.1.1 NC machine
9th	25-09-2023	5.1.2 CNC machine
	28-09-2023	5.1.3 CAD/CAM
	30-09-2023	5.1.3.1 CAD
	05-10-2023	5.1.3.2 CAM
10th	06-10-2023	5.1.3.3 Software and hardware for CAD/CAM
	07-10-2023	5.1.3.4 Functioning of CAD/CAM system
	09-10-2023	5.1.3.5 Application areas for CAD/CAM
	12-10-2023	5.2 Elements of CNC machine

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11th	13-10-2023	5.2.1 Introduction
	14-10-2023	5.2.2 Machine structure
	16-10-2023	5.2.3 Guideways/slide ways
	19-10-2023	5.2.3.1 Introduction and type of guideways
12th	20-10-2023	5.2.3.2 Factors of design of guideways
13th	23-10-2023 TO 28-10-2023	PUJA HOLIDAY
14th	30-10-2023	5.2.4 Drives
	02-11-2023	5.2.4.1 Spindle drives
	03-11-2023	5.2.4.2 Feed drive
	04-11-2023	5.2.5 Spindle and spindle bearing
15th	06-11-2023	6.0 Robotics
	09-11-2023	6.1 Definition, function and laws of robotics
	10-11-2023	6.2 Types of industrial robots
	11-11-2023	6.3 Robotic systems
16th	13-11-2023	6.4 Advantages and disadvantages of robots
	16-11-2023	CLASS TEST
	17-11-2023	CLASS TEST

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	18-11-2023	DISCUSSION
17th	20-11-2023	DOUBT CLEARING CLASS
	23-11-2023	CLASS TEST (FULL SYLLABUS)
	24-11-2023	DISCUSSION
	25-11-2023	DOUBT CLEARING CLASS
18th	30-11-2023	REVISION