

3RD SEM 01.10.2021-08.01.2022(WINTER)

LESSON PLAN

ENGG MATERIAL

ER. M.B.BISWAS & BANDITA

(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:- <b>Automobile Engg.</b>	Semester :- <b>3<sup>rd</sup></b>	Name of the teaching faculty :- <b>M.B.BISWABANDITA</b>
Subject Name :- <b>MECHATRONICS</b>	No. Of Days/Week Class Allotted :- <b>04 Periods/Week</b> <b>(Monday, Tuesday, Wednesday, Thursday-1 Period Each)</b>	Semester from Date - <b>01/10/2021</b> To Date - <b>08/01/2021</b> <b>No. of Weeks:15</b>
Week	Class Day	
1 <sup>st</sup>	-----	-----
2 <sup>nd</sup>	4.10.21 5.10.21 7.10.21	1.1Material Classification into ferrous & non ferrous 1.2 Different properties of material Physical, Chemical&Mechanical 1.3Performance requirement & 1.4 Material reliability & safety
3 <sup>rd</sup>	11.10.21 to 14.10.21	Druga puja holidays
4 <sup>th</sup>	21.10.21	2 Ferrous Material & Alloy
5 <sup>th</sup>	25.10.21 26.10.21 27.10.21	2.1 Characteristics & Application Of Ferrous materials 2.2Classification, Composition of low, midium, high carbon steel 2.3 Alloy steel -LOW, HIGH, TOOL&STAINLESS STEEL 2.4Tool steel effect of various alloying element Cr, Mn, Ni, V, Mo
	28.10.21	3. Iron - Carbon system
6 <sup>th</sup>	01.11.21 02.11.21 03.11.21	3.1.1 Introduction to phase diagram 3.1.2 Concept of phase diagram with neat sketch 3.1.3 Concept of cooling curves 3.2 introduction to Iron carbon Diagram

	04.11.2021	DIWALI/KALIPUJA HOLIDAY
7 <sup>th</sup>	8.11.21	3.2.1 Features of Iron carbon diagram
	9.11.21	3.2.2 salient micro constituent diagram of Iron & Steel
	10.11.21	<b>Class Test</b>
		4. Crystal Imperfection
	11.11.21	4.1 Introduction of Crystal Imperfection & Its Types
8 <sup>th</sup>	15.11.21	4.2 Classification of Crystal Imperfection
	16.11.21	4.3 Types & Causes of Point Defects
	17.11.21	4.4 Types Causes of Line Defects
	18.11.21	4.5 Effect on Imperfection on material Properties
	22.11.21	4.6 Deformation by Slip & Twinning
9 <sup>th</sup>	23.11.21	4.7 Effect of deformation on material properties
		5. Heat Treatment
	24.11.21	5.1 Introduction to Heat Treatment
	25.11.21	5.1 Purpose of Heat Treatment
10 <sup>th</sup>	29.11.21	5.2 Process of Heat treatments
	30.11.21	5.2 Types of different Heat Treatment
	01.12.21	Stress Relieving Measures
	02.12.21	5.3 surface Hardening & Its Types
11 <sup>th</sup>	06.12.21	5.4 Effect of heat Treatment on properties of Steel
	07.12.21	5.5 Hardenability of steel
	08.12.21	Assignment work
		6 Non Ferrous Alloys
	09.12.21	6.1 Aluminium alloy & its composition & properties, usage
12 <sup>th</sup>	13.12.21	6.2 Copper Alloys –Types, Composition
	14.12.21	6.2 usage of different alloy
	15.12.21	6.3 Predominating Alloy of lead alloy
	16.12.21	6.4 Different low alloy material

13 <sup>th</sup>	20.12.21 21.12.21	6.4 types different steel grade & material Class Test -2
		7. Bearing material
	22.12.21	7.1 Classification & composition of Bearing material
	23.12.21	7.1 Different properties of bearing material
		8.Spring material
14 <sup>th</sup>	27.12.21	Classification, types, properties spring material
	28.12.21	9.1 Polymers
	29.12.21	9.2 Properties of elastomers
	30.12.21	10.1 Composites classification, properties, use
15 <sup>th</sup>	3.1.22	10.2 Classification & use of ceramic
	4.1.22	VST
	5.1.22	REVISION
	6.1.22	REVISION
		REVISION