GOVERNMENT POLYTECHNIC MAYURBHANJ LESSONPLAN -2021/22(W)				
Discipline: MECHANICAL ENGINEERING		**Semester : 3rd**		**Name of the teaching faculty : SATYAJIT MOHANTA**
Subject : EM		**No. of daysper week classified:04**		**Semester from date:1.07.24 To 8.11.2024**
MONTH	WEEK	DAY		TOPICS
JULY	1st	1st	UNIT-1	Material classification into ferrous and non ferrous category and alloys
		2nd		Properties of Materials: Physical , Chemical and Mechanical
		4th		Performance requirements
		4th		Material reliability and safety
	2nd	1st		Revison of unit 1
		2nd	UNIT-2	Characteristics and application of ferrous materials
		4th		Classification, composition and application of low carbon steel,medium carbon steel and High carbon steel
		4th		Alloy steel: Low alloy steel, high alloy steel, tool steel and stainless steel
	3rd	1st		Tool steel: Effect of various alloying elements such as Cr, Mn, Ni, V, Mo
		2nd		Revison of unit 2
		4th	UNIT-3	Concept of phase diagram and cooling curves
		4th		Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
	4th	1st		Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
		2nd		Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
		4th		Revison of unit 3
		4th	UNIT-4	Crystal defines, classification of crystals, ideal crystal and crystal imperfections
	5th	2nd		Crystal defines, classification of crystals, ideal crystal and crystal imperfections
		4th		Classification of imperfection: Point defects, line defects, surface defects and volume defects
		4th		Classification of imperfection: Point defects, line defects, surface defects and volume defects
AUGUST	1st	1st		Types and causes of point defects: Vacancies, Interstitials and impurities
	2nd	1st		Types and causes of line defects: Edge dislocation and screw dislocation
		2nd		Effect of imperfection on material properties
		4th		Deformation by slip and twinning
		4th		Effect of deformation on material properties
	3rd	2nd		Revison of unit 4
		4th	UNIT-5	Purpose of Heat treatment
		4th		Process of heat treatment: Annealing, normalizing, hardenings tampering, stress relieving measure
	4th	1st		Surface hardening: Carburizing and Nitriding
		2nd		Effect of heat treatment on properties of steel
	5th	4th		Effect of heat treatment on properties of steel
		4th		Hardenability of steel

	1st	2nd		Hardenability of steel
		4th		Revison of unit 5
		4th	UNIT-06	Aluminum alloys: Composition, property and usage of Duralmin, y- alloy.
	2nd	1st		Aluminum alloys: Composition, property and usage of Duralmin, y- alloy.
		2nd		Copper alloys: Composition, property and usage of Copper Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass,Copper- Nickel
		4th		Copper alloys: Composition, property and usage of Copper Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass,Copper- Nickel
		4th		Copper alloys: Composition, property and usage of Copper Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass,Copper- Nickel
SEPTEMBER	3rd	1st		Predominating elements of lead alloys, Zinc alloys and Nickel alloys
		2nd		Predominating elements of lead alloys, Zinc alloys and Nickel alloys
	4th	1st		Low alloy materials like P-91, P-22 for power plants and other
		2nd		high temperature services. High alloy materials like stainless steel grades of duplex, super duplex materials etc.
		4th		Revison of unit 6
		4th	UNIT 7	Classification, composition, properties and uses of Copper base, Tin Base, Lead base, Cadmium base bearing materials
	5th	4th		Classification, composition, properties and uses of Copper base, Tin Base, Lead base, Cadmium base bearing materials
		4th		Classification, composition, properties and uses of Copper base, Tin Base, Lead base, Cadmium base bearing materials
	1st	1st		bearing materials
		2nd		bearing materials
	3rd	1st		Revison of unit 7
		2nd	UNIT 8	Classificaton, compositon, propertes and uses of Iron base and Copper base spring material
		4th		Classificaton, compositon, propertes and uses of Iron base and Copper base spring material
		4th		Revison of unit 8
OCTOBER	4th	1st	UNIT 9	Properties and application of thermosetting and thermoplastic polymers
		2nd		Properties and application of thermosetting and thermoplastic polymers
		4th		Properties of elastomers
		4th		Revison of unit 9
	5th	2nd	UNIT 10	Classification, composition, properties and uses of particulate
		4th		Classification, composition, properties and uses of particulate
		4th		Classification and uses of ceramics
NOVEMBER	1st	1st		Classification and uses of ceramics
		2nd		Revison of unit 10
		4th		discusion of internal question paper , question paper check
		4th		Class Test -2