GOVERNMENT POLYTECHNIC MAYURBHANJ LESSONPLAN -2022/23(W)				
discipline: MECHANICAL ENGINEERING		semester : 3rd		name of the teaching faculty : D.D PRAMANIK
subject : EM		No. of daysper week classified:04		semester from date:15.09.22 To 21.01.2023
MONTH	WEEK	DAY		TOPICS
September	3rd	2nd	UNIT-1	Material classification into ferrous and non ferrous category and alloys
		4th		Properties of Materials: Physical Chemical and Mechanical
		4th		Performance requirements
		5th		Material reliability and safety
	4th	2nd		Revision of Unit 1
		4th	unit 2	Characteristics and application of ferrous materials
		4th		Classification, composition and application of low carbon steel medium carbon steel and High carbon steel
		5th		Alloy steel: Low alloy steel, high alloy steel, tool steel and stainless steel
OCTOBER	1st	2nd		Tool steel: Effect of various alloying elements such as Cr, Mn, Ni, V, Mo
		4th	UNIT-3	Concept of phase diagram and cooling curves
		4th		Concept of phase diagram and cooling curves
		5th		Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
	2nd	2nd		Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
		4th		Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
		4th	Unit 4	Crystal defines, classification of crystals, ideal crystal and crystal imperfections
		5th		Crystal defines, classification of crystals, ideal crystal and crystal imperfection
	4th	2nd		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
		4th		Types and causes of point defects: Vacancies, Interstitials and impurities
		5th		Types and causes of line defects: Edge dislocation and screw dislocation
NOVEMBER	1st	2nd		Effect of imperfection on material properties,4.6 Deformation by slip and twinning
		4th		Effect of deformation on material properties,5.1 Purpose of Heat treatmen
		4th		Class Test -1
		5th		Revision of Unit 4
	2nd	2nd	UNIT-5	Process of heat treatment: Annealing, normalizing, hardenings tampering, stress relieving measure
		4th		Surface hardening: Carburizing and Nitriding
		4th		Effect of heat treatment on properties of steel
		5th		Hardenability of steel
	3rd	4th		Revision of Unit 5
		4th	Unit 6	Aluminum alloys: Composition, property and usage of Duralmin, y- alloy
		5th		Copper alloys: Composition, property and usage of Copper Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass,Copper- Nickel
	4th	5th		Predominating elements of lead alloys, Zinc alloys and Nickel alloys
December	1st	2nd		Low alloy materials like P-91, P-22 for power plants and other
		4th		high temperature services. High alloy materials like stainless steel grades of duplex, super duplex materials etc.
		4th		Internal Exam
		5th	UNIT-7	Classification, composition, properties and uses of Copper base, Tin Base, Lead base, Cadmium base bearing materials
	2nd	4th		bearing materials
		4th		Revision of Unit 7
		5th	unit 8	Classificaton, compositon, propertes and uses of Iron base and Copper base spring material
	3rd	4th		Classificaton, compositon, propertes and uses of Iron base and Copper base spring material
		4th		Revision of Unit 8
	4th	2nd		Properties and application of thermosetting and thermoplastic polymers

	4th	5th	Unit 9	Properties and application of thermosetting and thermoplastic polymers
January	1st	4th		Revision of Unit 9
		4th		Classification, composition, properties and uses of particulate
		5th	UNIT-10	Classification, composition, properties and uses of particulate
	2nd	2nd		Class Test -2
		5th		Class Test -2
	3rd	4th		Revision of unit 10
		4th		Doubt solving class
		5th		previous year question discussion