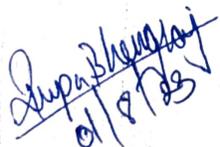


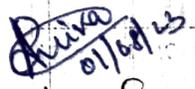
Winter - 23

Discipline: <b>MECHANICAL ENGG</b>	Semester :3 <sup>rd</sup>	Name of the Teaching Faculty: <b>MS RUPA BHERAJ</b>
Subject: <b>ENGINEERING MATERIAL</b>	No. of days/per week class allotted:04	No. of Weeks:15
Week	Class Day	Theory / Practical Topics
1 <sup>ST</sup>	1 <sup>ST</sup>	Material classification into ferrous and non ferrous category and alloys
	2 <sup>ND</sup>	Material classification into ferrous and non ferrous category and alloys
	3 <sup>RD</sup>	Properties of Materials: Physical , Chemical and Mechanical Performance requirements
	4 <sup>TH</sup>	Properties of Materials: Physical , Chemical and Mechanical Performance requirements
2 <sup>ND</sup>	1 <sup>ST</sup>	Material reliability and safety
	2 <sup>ND</sup>	Characteristics and application of ferrous materials
	3 <sup>RD</sup>	Classification, composition and application of low carbon steel, medium carbon steel and High carbon steel
	4 <sup>TH</sup>	Alloy steel: Low alloy steel, high alloy steel, tool steel and stainless steel
3 <sup>RD</sup>	1 <sup>ST</sup>	Tool steel: Effect of various alloying elements such as Cr, Mn, Ni, V, Mo,
	2 <sup>ND</sup>	Tool steel: Effect of various alloying elements such as Cr, Mn, Ni, V, Mo,
	3 <sup>RD</sup>	Concept of phase diagram and cooling curves
	4 <sup>TH</sup>	Concept of phase diagram and cooling curves
4 <sup>TH</sup>	1 <sup>ST</sup>	Concept of phase diagram and cooling curves
	2 <sup>ND</sup>	Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
	3 <sup>RD</sup>	Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
	4 <sup>TH</sup>	Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
5 <sup>TH</sup>	1 <sup>ST</sup>	Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
	2 <sup>ND</sup>	Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel
	3 <sup>RD</sup>	Crystal defines, classification of crystals, ideal crystal and crystal imperfections
	4 <sup>TH</sup>	Crystal defines, classification of crystals, ideal crystal and crystal imperfections
6 <sup>TH</sup>	1 <sup>ST</sup>	Classification of imperfection: Point defects, line defects, surface defects and volume defects
	2 <sup>ND</sup>	Classification of imperfection: Point defects, line defects, surface defects and volume defects
	3 <sup>RD</sup>	Types and causes of point defects: Vacancies, Interstitials and

		impurities
	4 <sup>TH</sup>	Types and causes of line defects: Edge dislocation and screw dislocation
7 <sup>TH</sup>	1 <sup>ST</sup>	Effect of imperfection on material properties
	2 <sup>ND</sup>	Deformation by slip and twinning
	3 <sup>RD</sup>	Effect of deformation on material properties
	4 <sup>TH</sup>	Effect of deformation on material properties
8 <sup>TH</sup>	1 <sup>ST</sup>	Purpose of Heat treatment
	2 <sup>ND</sup>	Process of heat treatment: Annealing, normalizing, hardening, tempering, stress relieving measures
	3 <sup>RD</sup>	Process of heat treatment: Annealing, normalizing, hardening, tempering, stress relieving measures
	4 <sup>TH</sup>	Process of heat treatment: Annealing, normalizing, hardening, tempering, stress relieving measures
9 <sup>TH</sup>	1 <sup>ST</sup>	Surface hardening: Carburizing and Nitriding
	2 <sup>ND</sup>	Surface hardening: Carburizing and Nitriding
	3 <sup>RD</sup>	Effect of heat treatment on properties of steel
	4 <sup>TH</sup>	Effect of heat treatment on properties of steel
10 <sup>TH</sup>	1 <sup>ST</sup>	Hardenability of steel
	2 <sup>ND</sup>	Hardenability of steel
	3 <sup>RD</sup>	Aluminum alloys: Composition, property and usage of Duralmin, $\gamma$ - alloy.
	4 <sup>TH</sup>	Aluminum alloys: Composition, property and usage of Duralmin, $\gamma$ - alloy
11 <sup>TH</sup>	1 <sup>ST</sup>	Aluminum alloys: Composition, property and usage of Duralmin, $\gamma$ - alloy
	2 <sup>ND</sup>	Copper alloys: Composition, property and usage of Copper-Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass, Copper- Nickel
	3 <sup>RD</sup>	Copper alloys: Composition, property and usage of Copper- Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass, Copper- Nickel
	4 <sup>TH</sup>	Predominating elements of lead alloys, Zinc alloys and Nickel alloys
12 <sup>TH</sup>	1 <sup>ST</sup>	Predominating elements of lead alloys, Zinc alloys and Nickel alloys
	2 <sup>ND</sup>	Low alloy materials like P-91, P-22 for power plants and other high temperature services. High alloy materials like stainless steel grades of duplex, super duplex materials etc.
	3 <sup>RD</sup>	Low alloy materials like P-91, P-22 for power plants and other high temperature services. High alloy materials like stainless steel grades of duplex, super duplex materials etc.
	4 <sup>TH</sup>	Low alloy materials like P-91, P-22 for power plants and other high temperature services. High alloy materials like stainless steel grades of duplex, super duplex materials etc.

13 <sup>TH</sup>	1 <sup>ST</sup>	Classification, composition, properties and uses of Copper base, Tin Base, Lead base, Cadmium base bearing materials
	2 <sup>ND</sup>	Classification, composition, properties and uses of Copper base, Tin Base, Lead base, Cadmium base bearing materials
	3 <sup>RD</sup>	Classification, composition, properties and uses of Copper base, Tin Base, Lead base, Cadmium base bearing Materials.
	4 <sup>TH</sup>	Classification, composition, properties and uses of Iron-base and Copper base spring material.
14 <sup>TH</sup>	1 <sup>ST</sup>	Classification, composition, properties and uses of Iron-base and Copper base spring material
	2 <sup>ND</sup>	Classification, composition, properties and uses of Iron-base and Copper base spring material
	3 <sup>RD</sup>	Properties and application of thermosetting and thermoplastic polymers
	4 <sup>TH</sup>	Properties and application of thermosetting and thermoplastic polymers
15 <sup>TH</sup>	1 <sup>ST</sup>	Properties of elastomers
	2 <sup>ND</sup>	Classification, composition, properties and uses of particulate based and fiber reinforced composites
	3 <sup>RD</sup>	Classification, composition, properties and uses of particulate based and fiber reinforced composites
	4 <sup>TH</sup>	Classification and uses of ceramics

  
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