

SESSION	WINTER 2022				
BRANCH:	MECHANICAL ENGINEERING				
SEMESTER:	3RD SEC-A				
SUBJECT:	ENGINEERING MATERIAL (TH-3)				
NAME OF THE FACULTY:		R L DASH			
SL NO.	MONTH	No. of academic days available for the subject	DATE	TOPICS TO BE COVERED	% COVERED
1	Sep-22	10	19.9.22	1.1Material classification into ferrous and non ferrous category and alloys	19%
			20.9.22	1.2Properties of Materials: Physical , Chemical and Mechanical	
			21.9.22	Properties of Materials: Physical , Chemical and Mechanical	
			22.9.22	1.3Performance requirements	
			23.9.22	1.4Material reliability and safety	
			26.9.22	2.1Characteristics and application of ferrous materials	
			27.9.22	2.2Classification, composition and application of low carbon steel,	
			28.9.22	medium carbon steel and High carbon steel	
			29.9.22	2.3Alloy steel: Low alloy steel, high alloy steel, tool steel and stainless steel	
			30.9.22	Alloy steel: Low alloy steel, high alloy steel, tool steel and stainless steel	
2	Oct-22	15	10.10.22	2.4Tool steel: Effect of various alloying elements such as Cr, Mn, Ni, V, Mo,	29%
			11.10.22	Tool steel: Effect of various alloying elements such as Cr, Mn, Ni, V, Mo,	
			12.10.22	3.1Concept of phase diagram and cooling curves	
			13.10.22	3.2Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel	
			14.10.22	Features of Iron-Carbon diagram with salient micro-constituents of Iron and Steel	
			17.10.22	4.1Crystal defines, classification of crystals, ideal crystal and crystal imperfections	
			18.10.22	Crystal defines, classification of crystals, ideal crystal and crystal imperfections	
			19.10.22	4.2Classification of imperfection: Point defects, line defects, surface defects and volume defects	

20.10.22	Classification of imperfection: Point defects, line defects, surface defects and volume defects
21.10.22	4.3Types and causes of point defects: Vacancies, Interstitials and impurities
25.10.22	4.4Types and causes of line defects: Edge dislocation and screw dislocation
26.10.22	4.5Effect of imperfection on material properties
27.10.22	4.6Deformation by slip and twinning
28.10.22	4.7Effect of deformation on material properties
31.10.22	5.1Purpose of Heat treatment
1.11.22	5.2Process of heat treatment: Annealing, normalizing, hardening, tempering, stress relieving measures
2.11.22	5.3Surface hardening: Carburizing and Nitriding
3.11.22	5.4Effect of heat treatment on properties of steel
4.11.22	Hardenability of steel
9.11.22	6.1Aluminum alloys: Composition, property and usage of Duralmin, $\gamma$ - alloy
10.11.22	6.2Copper alloys: Composition, property and usage of Copper- Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass, Copper- Nickel
11.11.22	Copper alloys: Composition, property and usage of Copper- Aluminum, Copper-Tin, Babbit , Phosperous bronze, brass, Copper- Nickel
21.11.22	6.3Predominating elements of lead alloys, Zinc alloys and Nickel alloys
22.11.22	6.4Low alloy materials like P-91, P-22 for power plants and other
23.11.22	high temperature services. High alloy materials like stainless steel grades of duplex, super duplex materials etc
24.11.22	high temperature services. High alloy materials like stainless steel grades of duplex, super duplex materials etc
25.11.22	7.1Classification, composition, properties and uses of Copper base,
28.11.22	Tin Base, Lead base, Cadmium base bearing materials
29.11.22	8.1Classification, composition, properties and uses of Iron-base and Copper base spring material

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Nov-22

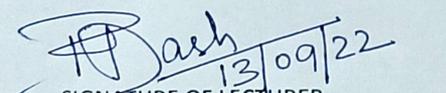
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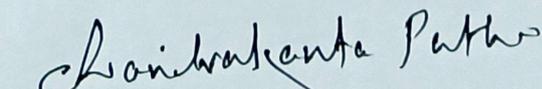
29%

			30.11.22	Classification, composition, properties and uses of Iron-base and Copper base spring material	
4	Dec-22	12	1.12.22	9.1 Properties and application of thermosetting and thermoplastic polymers	23%
			2.12.22	Properties and application of thermosetting and thermoplastic polymers	
			5.12.22	9.2 Properties of elastomers	
			6.12.22	Properties of elastomers	
			7.12.22	10.1 Classification, composition, properties	
			8.12.22	Classification, composition, properties	
			9.12.22	uses of particulate based and fiber reinforced composites	
			12.12.22	10.2 Classification and uses of ceramics	
			13.12.22	Classification and uses of ceramics	
			14.12.22	Classification and uses of ceramics	
			15.12.22	REVISION	
16.12.22	REVISION				

SIGNATURE OF LECTURER

SIGNATURE OF H.O.D. (MECHANICAL)

  
 13/09/22  
 SIGNATURE OF LECTURER  
 Rajeeb Lochan Dash

  
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