SESSION	WINTER 2022
BRANCH:	MECHANICAL ENGINEERING
SEMESTER:	3RD SEC-A
SUBJECT:	ENGINERING 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	
3	Nov-22	15	1.11.22	5.2Process of heat treatment: Annealing, normalizing, hardening, tampering, stress relieving measures	29%
			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, y- 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	

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

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