ACADEMIC SESSION: 2022-23 (Winter-2022)

Discipline : MECHANICAL ENGINEERING	Semester : 3RD	Name of the Teaching Faculty : SWETAPARNA DASH
Subject : ENGINEERING MATERIALS	Semester From date: 01/08/2023 to 30/11/2023	

SL NO.	DATE	CHAPTER	THEORY TOPIC NAME	NO.OF PERIODS
1	03.08.23	Engineering materials and their properties	Material classification into ferrous and non ferrous category and alloys	1
2	03.08.23		Properties of Materials: Physical and chemical	1
3	04.08.22		Mechanical properties of materials	1
4	07.08.23		Performance requirements	1
5	08.08.23		Material reliability and safety	1
6	10.08.23	Ferrous Materials and alloys	Characteristics and application of ferrous materials	1
7	11.08.23		Classification, composition application of low carbon steel	1
8	14.08.23		Classification ,composition of high carbon steel	1
9	17.08.23		Low alloy steel, high alloy steel ,tool steel and stainless steel	1
10	18.08.23		Tool steel: Effect of various alloying elements such as Cr, Mn, Ni, V, Mo,	1
11	21.08.23	Iron – Carbon system	Concept of phase diagram	1
12	22.08.23		Describe about cooling curves	1
13	24.08.23		Features of Iron-Carbon diagram	1
14	25.08.23		salient micro-constituents of Iron	1
15	28.08.23		salient micro-constituents of Steel	1
16	29.08.23	Crystal imperfections	Define crystal, ideal crystal,crystal imperfection	1
17	01.09.23		Classification of crystal	1
18	04.09.23		Classification of imperfection: Point defects	1
19	05.09.23		Describe about line defect	1
20	08.09.23		Surface defect and volume defects	1
21	11.09.23		Types and causes of point defects vacancies,interstitials and impurities	1
22	12.09.23		Edge dislocation	1
23	14.09.23		screw dislocation	1
24	15.09.23		Effect of imperfection on material properties	1
25	18.09.23		Deformation by slip and twinning	1
26	22 09.23		Effect of deformation on material properties	1
27	25.09.23	Heat Treatment	Purpose of Heat treatment	1
28	26.09.23		Process of heat treatment: Annealing, normalizing,	1
29	03.10.23		hardening, tampering, stress relieving measures	1
30	05.10.23		Surface hardening: Carburizing and Nitriding	1
31	06.10.23		Effect of heat treatment on properties of steel Hardenability of steel	1

32	09.10.2023	Non-ferrous alloys	Aluminum alloys: Composition, property and usage of Duralmin, y- alloy.	1
33	10.10.2023		Copper alloys: Composition, property and usage of Copper- Aluminum	1
34	12.10.2023		Composition ,property and usages of copper aluminium ,copper tin, babbit	1
35	13.10.2023		Composition ,property and usages phosperous, ,bronze	1
36	16.10.2023		Composition ,property and usages brass,copper-nickel	1
37	17.10.2023		Predominating elements of lead alloys	1
38	19.10.2023		predominating elements of zinc alloys and Nickel alloys	1
39	20.10.2023		Low alloy materials like P-91, P-22 for power plants and other 10 high temperature services	1
40	02.11.2023		High alloy materials like stainless steel grades of duplex	1
41	03.11.2023		super duplex materials	1
42	06.11.2023	Bearing Material	Classification, composition, property and uses of copper base materials	1
43	07.11.2023		Classification, composition, properties and uses of tin base materials	1
44	09.11.2023		Classification of lead base materials	1
45	10.11.2023		Composition of lead base material	1
46	13.11.2023		Properties of lead base materials	1
47	14.11.2023		Uses of lead base materials	1
48	16.11.2023		Classification and composition of cadmium base materials	1
49	17.11.2023		Classification, composition ,properties of iron base spring materials	1
50	20.11.2023		Classification, composition, properties of copper base spring materials	1
51	21.11.2023	Spring materials	Properties and application of thermositting polymers	1
52	23.11.2023	Polymers	Properties and application of thermoplastic polymers	1
53	24.11.2023		Properties of elastomers	1
54	28.11.23	Composites and Ceramics	Classification, composition, properties and uses of particulate based and fiber reinforced composites	1
55	30.11.23		Classification and uses of ceramics	1
			TOTAL CLASS	55

Swetaparna Dash

Prepared by
Swetaparna Dash
Lect(Mechanical Engg)
G P Sonepur

31.7.23

Head of the Department
(Mechanical Engg)
G P Sonepur

31/7/23

Academic co-ordinator
G P Sonepur