

**ACADEMIC SESSION: 2022-23(SUMMER -2023)**

DISCIPLINE:MECHANICAL ENGINEERING		Semester:4TH	Name of the teaching faculty: SARAT KUMAR BISWAL	
Subject: ADVANCE MANUFACTURING PROCESS			Semester from date:14.02.2023 to 23.05.2023	
SL NO	DATE	CHAPTER	THEORY TOPIC NAME	NO OF PERIODS
1	14.02.23	<b>Modern Machining Processes</b>	Introduction – comparison with traditional machining.	1
2	15.02.23		Ultrasonic Machining: principle, Description of equipment , applications	1
3	18.02.23		Ultrasonic Machining: principle, Description of equipment, applications	1
4	20.02.23		Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.	1
5	21.02.23		Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.	1
6	22.02.23		Wire cut EDM: Principle, Description of equipment, controlling parameters; applications	1
7	25.02.23		Wire cut EDM: Principle, Description of equipment, controlling parameters; applications	1
8	1.03.23		Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.	1
9	4.03.23		Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.	1
10	6.03.23		Laser Beam Machining: principle, description of equipment, Material removal rate, application	1
11	11.03.23		Laser Beam Machining: principle, description of equipment, Material removal rate, application	1
12	13.03.23		Electro Chemical Machining: principle, description of equipment, Material removal rate, application	1
13	14.03.23		Electro Chemical Machining: principle, description of equipment, Material removal rate, Application	1
14	15.03.23		Plasma Arc Machining – principle, description of equipment, Material removal rate,	1

			Process parameters, performance characterization, Applications.	
15	18.03.23		Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	1
16	20.03.23		Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	1
17	21.03.23		Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	1
18	22.03.23	<b>Plastic Processing</b>	Processing of plastics.	1
19	25.03.23		Moulding processes: Injection moulding,	1
20	27.03.23		Compression moulding, Transfer moulding.	1
21	28.03.23		Extruding; Casting; Calendering.	1
22	29.03.23		Fabrication methods-Sheet forming, Blow moulding,.	1
23	3.04.23		Laminating plastics (sheets, rods & tubes), Reinforcing	1
24	4.04.23		Applications of Plastics.	1
25	5.04.23	<b>Additive Manufacturing Process</b>	Need for Additive Manufacturing	1
26	8.04.23		Fundamentals of Additive Manufacturing	1
27	10.04.23		AM Process Chain	1
28	11.04.23		Advantages and Limitations of AM, Commonly used Terms	1
29	12.04.23		Classification of AM process	1
30	15.04.23		Fundamental Automated Processes	1
31	17.04.23		Distinction between AM and CNC, other related technologies.	1
32	18.04.23		Application –Application in Design, Aerospace Industry	1
33	19.04.23		Automotive Industry, Jewelry Industry, Arts and Architecture	1
34	22.04.23		RP Medical and Bioengineering Applications.	1
35	24.04.23		Web Based Rapid Prototyping Systems.	1
36	25.04.23		Concept of Flexible manufacturing process	1
37	26.04.23		concurrent engineering, production tools like capstan and turret lathes	1
38	29.04.23		rapid prototyping processes.	1
39	1.05.23	<b>Special Purpose Machines (SPM):</b>	4.1 Concept of Special Purpose Machines (SPM	1
40	2.05.23		, General elements of SPM.	1
41	3.05.23		Productivity improvement by SPM,	1
42	6.05.23		Productivity improvement by SPM,	1
43	8.05.23		Principles of SPM design.	1
44	9.05.23		Principles of SPM design.	1
45	10.05.23	<b>Maintenance of Machine Tools:</b>	Types of maintenance	1
46	15.05.23		Repair cycle analysis	1

47	16.05.23		Repair complexity	1
48	17.05.23		Maintenance manual	1
49	20.05.23		Maintenance records	1
50	22.05.23		Housekeeping	1
51	23.05.23		Introduction to Total Productive Maintenance (TPM).	1

Prepared By  
 Sarat Kumar Biswal  
 Sr Lect (MECHANICAL)  
 G P SONEPUR