Name of the Institute:	R.K. INSTITUTE OF ENGG. & TECH.
Department:	Mechanical Engineering
Semester:	6th SEM.
Subject Name with code:	ADVANCE MANUFACTURING PROCESS TH:4(b)
Total No. of Class (Required):	60 FROM-22/12/2025 TO-18/04/2026
Faculty Name:	Mr. PRADIP BARIK

Class No.	Brief Description of the Topic/Chapter to be taught	Remarks
1	1.1 Introduction – comparison with traditional machining	
2	1.2 Ultrasonic Machining: principle, Description of equipment, applications.	
3	1.3 Electric Discharge Machining: Principle, Description of equipment,	
4	Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.	
5	1.4 Wire cut EDM: Principle, Description of equipment,	
6	controlling parameters; applications.	
7	1.5 Abrasive Jet Machining: principle, description of equipment,	
8	Material removal rate, application.	
9	1.5 Laser Beam Machining: principle, description of equipment,	
10	Material removal rate, application	
11	1.6 Electro Chemical Machining: principle, description of equipment	
12	Material removal rate, application	
13	1.7 Plasma Arc Machining – principle, description of equipment,	
14	Material removal rate, Process parameters, performance characterization, Applications.	
15	1.8 Electron Beam Machining - principle, description of equipment,	
16	Material removal rate, Process parameters, performance characterization, Applications.	
17	2.1 Processing of plastics.	
18	2.2 Moulding processes: Injection moulding,	
19	Compression moulding, Transfer moulding.	
20	2.3 Extruding; Casting; Calendering.	
21	2.4 Fabrication methods-Sheet forming, Blow moulding,	
22	Laminating plastics (sheets, rods & tubes), Reinforcing.	
23	2.5 Applications of Plastics.	
24	3.1 Introduction, Need for Additive Manufacturing	
25	3.2 Fundamentals of Additive Manufacturing, AM Process Chain	
26	3.3 Advantages and Limitations of AM, Commonly used Terms	
27	3.4 Classification of AM process, Fundamental Automated Processes,	

28	Distinction between AM and CNC, other related technologies	
29	3.5 Application –Application in Design, Aerospace Industry, Automotive Industry	
30	Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.	
31	3.6 Web Based Rapid Prototyping Systems	
32	3.7 Concept of Flexible manufacturing process, concurrent engineering	
33	production tools like capstan and turret lathes, rapid prototyping processes.	
34	4.0 Special Purpose Machines (SPM):	
35	4.1 Concept, General elements of SPM,	
36	Productivity improvement by SPM, Principles of SPM design.	
37	5.0 Maintenance of Machine Tools: Introduction	
38	5.1 Types of maintenance, Repair cycle analysis	
39	Repair complexity, Maintenance manual, Maintenance records, Housekeeping.	
40	Introduction to Total Productive Maintenance (TPM).	
41	Revision of chapter 01	
42	Revision of chapter 01	
43	Revision of chapter 02	
44	Revision of chapter 02	
45	Revision of chapter 03	
46	Revision of chapter 03	
47	Revision of chapter 04	
48	Revision of chapter 04	
49	Revision of chapter 05	
50	Revision of chapter 05	
51	Previous year Question Discussion	
52	Previous year Question Discussion	
53	Previous year Question Discussion	
54	Previous year Question Discussion	
55	Previous year Question Discussion	
56	Previous year Question Discussion	
57	Previous year Question Discussion	
58	Previous year Question Discussion	
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