Name of the Institute:	**C. V. Raman Polytechnic**
Department:	**Mechanical Engineering**
Semester/Division/Branch:	**6th Sem/ME**
Subject Name with code:	Advance manufacturing processes(Th4)
Total No. of Class (Required):	**60**
Faculty Name:	**Dr Shubhashree Mohapatra**

Class No.	*Brief description of the Topic/Chapter to be taught*	Remarks
1	Introduction – comparison with traditional machining.	
2	Ultrasonic Machining: principle, Description of equipment, applications.	
3	Ultrasonic Machining: principle, Description of equipment, applications.	
4	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.	
5	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.	
6	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.	
7	Wire cut EDM: Principle, Description of equipment, controlling parameters; applications.	
8	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.	
9	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.	
10	Wire cut EDM: Principle, Description of equipment, controlling parameters; applications.	
11	Laser Beam Machining: principle, description of equipment, Material removal rate, application.	
12	Laser Beam Machining: principle, description of equipment, Material removal rate, application.	
13	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.	
14	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.	
15	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.	
16	Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	
17	Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	
18	Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	
19	Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	
20	Revision	
21	Revision	
22	Processing of plastics.	
23	Moulding processes: Injection moulding	
24	Moulding processes: Compression moulding	
25	Moulding processes: Transfer moulding	

26	Extruding	
27	Casting; Calendering.	
28	Fabrication methods-Sheet forming	
29	Fabrication methods- Blow moulding	
30	Fabrication methods- Laminating plastics (sheets, rods & tubes), Reinforcing.	
31	Applications of Plastics.	
32	Revision	
33	Revision	
34	Introduction, Need for Additive Manufacturing	
35	Fundamentals of Additive Manufacturing,	
36	AM Process Chain	
37	Advantages and Limitations of AM, Commonly used Terms	
38	Classification of AM process,	
39	Fundamental Automated Processes	
40	Distinction between AM and CNC, other related technologies.	
41	Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.	
42	Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.	
43	Web Based Rapid Prototyping Systems.	
44	Web Based Rapid Prototyping Systems.	
45	Concept of Flexible manufacturing process, concurrent engineering	
46	production tools like capstan and turret lathes	
47	Rapid prototyping processes.	
48	Rapid prototyping processes.	
49	Concept, General elements of SPM	
50	Revision	
51	Productivity improvement by SPM, Principles of SPM design.	
52	Productivity improvement by SPM, Principles of SPM design.	
53	Types of maintenance	
54	Repair cycle analysis	
55	Repair complexity	
56	Maintenance manual	
57	Maintenance records	
58	Housekeeping.	
59	Total Productive Maintenance	
60	Revision	

Faculty

HOD