

# C. V. RAMAN POLYTECHNIC, BHUBANESWAR

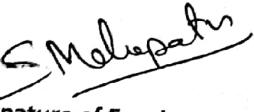
## LESSON PLAN

### Session (2025-2026)

Discipline: Mechanical Engineering	Semester: 6th Semester, Summer/2026	Name of the Faculty: Dr. Shubhashree Mohapatra, Assistant Professor Email ID: shubha.shree@cvrp.edu.in
Subject: Advance manufacturing processes Theory- 04 (Th4)	No. of Days/week: 04	Start Date: 22/12/2025 End Date: 18/04/2026

Week	Class Day	Theory Topics
1st	1st	Introduction – comparison with traditional machining.
	2nd	Ultrasonic Machining: principle, Description of equipment, applications.
	3rd	Ultrasonic Machining: principle, Description of equipment, applications.
	4th	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.
2nd	1st	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.
	2nd	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.
	3rd	Wire cut EDM: Principle, Description of equipment, controlling parameters; applications.
	4th	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.
3rd	1st	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.
	2nd	Wire cut EDM: Principle, Description of equipment, controlling parameters; applications.
	3rd	Laser Beam Machining: principle, description of equipment, Material removal rate, application.
	4th	Laser Beam Machining: principle, description of equipment, Material removal rate, application.
4th	1st	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.
	2nd	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.
	3rd	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.
	4th	Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.
5th	1st	Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.
	2nd	Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.
	3rd	Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.
	4th	Revision
6th	1st	Revision
	2nd	Processing of plastics.
	3rd	Moulding processes: Injection moulding

	4th	Moulding processes: Compression moulding
7th	1st	Moulding processes: Transfer moulding
	2nd	Extruding
	3rd	Casting; Calendering.
	4th	Moulding processes: Transfer moulding
8th	1st	Fabrication methods-Sheet forming
	2nd	Fabrication methods- Blow moulding
	3rd	Fabrication methods- Laminating plastics (sheets, rods & tubes), Reinforcing.
	4th	Applications of Plastics.
9th	1st	Revision
	2nd	Revision
	3rd	Introduction, Need for Additive Manufacturing
	4th	Fundamentals of Additive Manufacturing,
10th	1st	AM Process Chain
	2nd	Advantages and Limitations of AM, Commonly used Terms
	3rd	Classification of AM process,
	4th	Fundamental Automated Processes
11th	1st	Distinction between AM and CNC, other related technologies.
	2nd	Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.
	3rd	Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.
	4th	Web Based Rapid Prototyping Systems.
12th	1st	Web Based Rapid Prototyping Systems.
	2nd	Concept of Flexible manufacturing process, concurrent engineering
	3rd	production tools like capstan and turret lathes
	4th	Rapid prototyping processes.
13th	1st	Rapid prototyping processes.
	2nd	Concept, General elements of SPM
	3rd	Revision
	4th	Productivity improvement by SPM, Principles of SPM design.
14th	1st	Productivity improvement by SPM, Principles of SPM design.
	2nd	Types of maintenance
	3rd	Repair cycle analysis
	4th	Repair complexity
15th	1st	Maintenance manual
	2nd	Maintenance records
	3rd	Housekeeping.
	4th	Total Productive Maintenance

  
Signature of Faculty

  
Signature of H.O.D.