

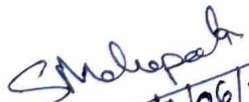
C. V. RAMAN POLYTECHNIC, BHUBANESWAR

LESSON PLAN Session (2026-2027)

Discipline: Mechanical Engineering	Semester: 5 th Semester, Winter/2026	Name of the Faculty: Dr. Shubhashree Mohapatra, Assistant Professor Email ID: shubha.shree@cvrp.edu.in
Subject: Advance manufacturing processes Theory- 04 (Th4b)	No. of Days/week: 03	Start Date: 01/07/2026 End Date: 05/11/2026

Week	Class Day	Theory Topics
1st	1st	Introduction – comparison with traditional machining.
	2nd	Need of Advanced manufacturing process
	3rd	classification of Advanced manufacturing process
2nd	1st	Mechanical Energy Based Processes: Abrasive Jet Machining - Its Introduction
	2nd	Working Principles of Abrasive Jet Machining, equipment used in Abrasive Jet Machining
	3rd	Process parameters, MRR, Applications of Abrasive Jet Machining
3rd	1st	Water Jet Machining - Its Introduction
	2nd	Working Principles of Water Jet Machining, equipment used in Water Jet Machining
	3rd	Process parameters, MRR, Applications of Water Jet Machining
4th	1st	Abrasive Water Jet Machining - Its Introduction, Working Principles
	2nd	equipment used in Abrasive Water Jet Machining, Process parameters, MRR, Applications of Abrasive Water Jet Machining
	3rd	Ultrasonic Machining - Its Introduction, Working Principles
5th	1st	equipment used in Ultrasonic Machining, Process parameters, MRR, Applications of Ultrasonic Machining
	2nd	Electrical Energy Based Processes: Electric Discharge Machining (EDM)- Its Introduction
	3rd	Electric Discharge Machining (EDM)- working Principle
6th	1st	Equipment used in EDM
	2nd	Process Parameters of EDM
	3rd	Surface Finish and MRR, electrode / Tool, Power and control Circuits of EDM
7th	1st	Tool Wear and Dielectric and flushing used in EDM
	2nd	Wire cut EDM – Introduction and working principle
	3rd	Application of EDM and WEDM

8th	1st	Revision
	2nd	Chemical and Electro-Chemical Energy Based Processes: Chemical machining -Introduction and working principle
	3rd	Etchants and Maskant techniques of applying maskants
9th	1st	Process Parameters and Surface finish and MRR of ChM
	2nd	Working Principles of ECM
	3rd	Equipment used in ECM, Surface Roughness and MRR
10th	1st	Electrical Circuit, Process Parameters ECG and ECH
	2nd	Application of ECM and ChM
	3rd	Revision
11th	1st	Thermal Energy Based Processes: Laser Beam machining and drilling (LBM)- Working Principle, Equipment
	2nd	Equipment and Application of LBM
	3rd	Plasma Arc Machining (PAM) Working Principle
12th	1st	Equipment and Application of PAM
	2nd	Quiz
	3rd	Electron Beam Machining (EBM). Working Principle, Equipment used in EBM
13th	1st	Equipment and Application of PAM
	2nd	Additive Manufacturing Process: Introduction, Need for Additive Manufacturing
	3rd	Fundamentals of Additive Manufacturing, AM Process Chain
14th	1st	Advantages and Limitations of AM
	2nd	Fundamental properties of materials
	3rd	Introduction to metals, polymers
15th	1st	Introduction to ceramics and composites
	2nd	Revision
	3rd	Revision


 Signature of Faculty
 24/06/2024


 Signature of H.O.D.
 24.6.24