GOVERNMENT POLYTECHNIC JAJPUR
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DEPARTMENT OF MECHANICAL ENGINEERING (2025-2026)

LESSON PLAN

Discipline: mechanical	Semester: 1st SEM	Name of the Teaching faculty: JANMEJAY SARANGI
Subject: AMP	No of Days /Week class alloted: 4	Semester from Date: 22/12/2025 To Date: 18/04/2026 No of weeks: 15

Week	Class Day	Topics
1st	1st	Modern Machining Processes:(Chapter-1) Introduction
	2nd	Comparison with traditional machining.
	3rd	Ultrasonic Machining: principle, Description of equipment, applications.
	4th	EDM:Principle, Description of equipment, Dielectric fluid
2nd	1st	EDM:tools (electrodes), Process parameters, Output characteristics,
	2nd	Wire cut EDM:Principle, Description of equipment
	3rd	Wire cut EDM:controlling parameters,applications
	4th	Abrasive Jet Machining: principle,description,Material removal rate,
3rd	1st	AJM-Application
	2nd	Laser Beam Machining: principle, description,MRR and application
	3rd	ECM: principle,description, Material removal rate, applications
	4th	Plasma Arc Machining – principle, description of equipment,MRR
4th	1st	PAM-Process parameters, performance characterization, Applications.
	2nd	Electron Beam Machining -principle,description, MRR, Applications
	3rd	Revision-Chapter1
	4th	Plastic Processing(Chapter-2): Introduction -Processing of plastics.
5th	1st	Moulding processes
	2nd	Injection moulding, Compression moulding, Transfer moulding.
	3rd	Extruding, Casting; Calendering
	4th	Fabrication methods-Sheet forming, Blow moulding,
6th	1st	Laminating plastics (sheets, rods & tubes); Reinforcing
	2nd	Applications of Plastics.

6th	3rd	Revision
	4th	CLASS TEST-1 and probable question discussion
7th	1st	Additive Manufacturing Process:(Chapter-3)
	2nd	Introduction, Need for Additive Manufacturing
	3rd	Fundamentals of Additive Manufacturing, AM Process Chain
	4th	Advantages and Limitations of AM, Commonly used Terms
8th	1st	Classification of AM process, Fundamental Automated Processes
	2nd	Distinction between AM and CNC, other related technologies.
	3rd	Application --Application in Design, Aerospace Industry
	4th	Automotive Industry,Jewelry Industry, Arts and Architecture
9th	1st	Medical and Bioengineering Applications.
	2nd	Web Based Rapid Prototyping Systems
	3rd	Concept of Flexible manufacturing process
	4th	Concurrent engineering.
10th	1st	Production tools like capstan and turret lathes
	2nd	Rapid prototyping processes
	3rd	Revision
	4th	Previous year question answer discussion of chapter 1,2 and 3
11th	1st	Special Purpose Machines (SPM):(Chapter-4)
	2nd	Introduction and concept of SPM
	3rd	General elements of SPM
	4th	Productivity improvement by SPM
12th	1st	Principles of SPM design.
	2nd	Revision
	3rd	Previous year question
	4th	CLASS TEST-2
13th	1st	Maintenance of Machine Tools:(Chapter-5)
	2nd	Types of maintenance
	3rd	Repair cycle analysis
	4th	Repair complexity
14th	1st	Maintenance manual
	2nd	Maintenance records
	3rd	Housekeeping
	4th	Introduction to Total Productive Maintenance (TPM)
15th	1st	Revision
	2nd	Revision

15th	3rd	Probable question discussion
	4th	Probable question discussion

Jaymejay Sarangi

Signture of Faculty