

GOVT. POLYTECHNIC BOLANGIR		LESSON PLAN
Discipline : Mechanical	Semester: 6th	Name of the Teaching Faculty : Sachidananda Padhi
Subject : ADVANCE MANUFACTURING PROCESS	No. of Days / per week class allotted : 4	Semester From date : 05.02.2025 To Date : 17.05.2025 No. of Weeks: 15
Week	Class Day	Topics
05 Feb to 08 Feb	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.
10 Feb to 15 Feb	1st	Electric Discharge Machining: Process parameters, Output characteristics, applications.
	2nd	Wire cut EDM: Principle, Description of equipment, controlling parameters; applications.
	3rd	Wire cut EDM: controlling parameters; applications.
	4th	DISCAUSS ABOUT INDUSTRIAL USES
17 Feb to 22 Feb	1st	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.
	2nd	Abrasive Jet Machining: Material removal rate, application.
	3rd	DISCAUSS ABOUT INDUSTRIAL USES
	4th	MRR CALCULATION
24 Feb to 01 Mar	1st	Laser Beam Machining: principle, description of equipment, Material removal rate, application.
	2nd	Laser Beam Machining: Material removal rate, application.
	3rd	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.
	4th	Electro Chemical Machining: Material removal rate, application.
03 Mar to 08 Mar	1st	Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.
	2nd	Plasma Arc Machining – performance characterization, Applications.
	3rd	MRR CALCULATION
	4th	DISCAUSS ABOUT INDUSTRIAL USES
10 Mar to 15 Mar	1st	INTRO TO Processing of plastics.
	2nd	Processing of plastics.
	3rd	Moulding processes: Injection moulding, Compression moulding, Transfer moulding.
	4th	Moulding processes: Transfer moulding.
17 Mar to 22 Mar	1st	Extruding; Casting; Calendering.
	2nd	Fabrication methods-Sheet forming, Blow moulding,
	3rd	Fabrication methods-Laminating plastics (sheets, rods & tubes), Reinforcing.
	4th	DISCAUSS ABOUT INDUSTRIAL USES
24 Mar to 29 Mar	1st	Applications of Plastics.
	2nd	Introduction, Need for Additive Manufacturing
	3rd	Fundamentals of Additive Manufacturing, AM Process Chain
	4th	Advantages and Limitations of AM, Commonly used Terms
31 Mar to 05 Apr	1st	Classification of AM process, Fundamental Automated Processes, 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	Web Based Rapid Prototyping Systems.
	4th	Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.

07 Apr to 12 Apr	1st	Concept OF SPM
	2nd	General elements of SPM
	3rd	Productivity improvement by SPM
	4th	Principles of SPM design.
14 Apr to 19 Apr	1st	Types of maintenance
	2nd	Types of maintenance
	3rd	Repair cycle analysis
	4th	Repair cycle analysis
21 Apr to 26 Apr	1st	Repair complexity
	2nd	Maintenance manual
	3rd	Maintenance records
	4th	Housekeeping, Introduction to Total Productive Maintenance (TPM)
28 Apr to 03 May	1st	DISCAUSS ABOUT INDUSTRIAL USES OF AJM
	2nd	DISCAUSS ABOUT INDUSTRIAL USES OF USM
	3rd	DISCAUSS ABOUT INDUSTRIAL USES OF ECM
	4th	DISCAUSS ABOUT INDUSTRIAL USES EBM
05 May to 10 May	1st	REVISION
	2nd	DOUBT CLEARING
	3rd	CLASS TEST
	4th	CLASS TEST
12 May to 17 May	1st	REVISION
	2nd	DOUBT CLEARING
	3rd	CLASS TEST
	4th	CLASS TEST

Sachinbharada Rdb
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