

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING**



LESSON PLAN

SUBJECT: Advance Manufacturing Processes (TH 4)

FACULTY: Chiranjeevi Pattnaik

ACCADEMIC SESSION: 2022-23

SEMESTER: 6th

SEC: B

Sd/-
H O D (Mech Engg.)

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Discipline: Mechanical Engineering	Semester: 6th B		Name of the teaching faculty: Chiranjeevi Pattnaik
Subject: Advance Manufacturing Processes	No. of Days/ per week class allotted: 04 periods per week Mon-1 period, Tue-1 period, Wed-1 period, Thu -1 period)		Semester From Date: 14-02-2023 To Date: 22-05-2023 No. of weeks: 16 weeks
Week	Class Day	No of period available	Theory Topics
1ST	14/02/2023	1	3.0 Additive Manufacturing Process: 3.1 Introduction, Need for Additive Manufacturing
	15/02/2023	1	3.2 Fundamentals of Additive Manufacturing
	16/02/2023	1	3.2 AM Process Chains
2ND	20/02/2023	1	3.3 Advantages and Limitations of AM, Commonly used Terms
	21/02/2023	1	3.4 Classification of AM process,
	22/02/2023	1	3.4 Fundamental Automated Processes, Distinction between AM and CNC, other related technologies.
	23/02/2023	1	3.5 Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications
3RD	27/02/2023	1	3.6 Web Based Rapid Prototyping Systems

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	28/02/2023	1	3.7 Concept of Flexible manufacturing process
4TH	01/03/2023	1	3.7 concurrent engineering, production tools like capstan and turret lathes,
	02/03/2023	1	3.7 rapid prototyping processes
5TH	06/03/2023	1	4.0 Special Purpose Machines (SPM): 4.1 Concept
	09/03/2023	1	4.1 General elements of SPM
6TH	13/03/2023	1	4.1 Productivity improvement by SPM,
	14/03/2023	1	4.1 Principles of SPM design.
	15/03/2023	1	5.0 Maintenance of Machine Tools: 5.1 Types of maintenance, 5.1 Repair cycle analysis,
	16/03/2023	1	5.1 Repair complexity
7TH	20/03/2023	1	5.1 Maintenance manuals Maintenance records, Housekeeping.
	21/03/2023	1	5.1 Introduction to Total Productive Maintenance (TPM)
	22/03/2023	1	2.0 Plastic Processing:

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	23/03/2023	1	2.1 Processing of plastics.
8TH	27/03/2023	1	2.2 Moulding processes: Injection moulding,
	28/03/2023	1	Monthly Class test-01 2.2 Compression moulding
	29/03/2023	1	2.2 Transfer moulding
	03/04/2023	1	2.3 Extruding 2.3 Casting
04/04/2023	2.3 Calendering		
9TH	05/04/2023	1	2.4 Fabrication methods -Sheet forming,
	06/04/2023	1	2.4 Blow moulding
	10/04/2023	1	2.4 Laminating plastics (sheets, rods & tubes),
10TH	11/04/2023	1	2.4 Reinforcing
	12/04/2023	1	2.5 Applications of Plastics.
	13/04/2023	1	1.0 Modern Machining Processes: 1.1 Introduction – comparison with traditional machining.

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11TH	17/04/2023	1	1.2 Ultrasonic Machining: principle, Description of equipment, applications
	18/04/2023	1	1.3 Electric Discharge Machining: Principle, Description of equipment,
	19/04/2023	1	1.3 Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.
	20/04/2023	1	1.4 Wire cut EDM: Principle, Description of equipment, controlling parameters; applications
12TH	24/04/2023	1	1.5 Abrasive Jet Machining: principle,
	25/04/2023	1	1.5 Abrasive Jet Machining: description of equipment, Material removal rate, application
	26/04/2023	1	1.5 Laser Beam Machining: principle,
	27/04/2023	1	Internal examination
13TH	01/05/2023	1	1.5 Laser Beam Machining: Material removal rate, application.
	02/05/2023	1	1.6 Electro-Chemical Machining: principle, description of equipment, Material removal rate, application.

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	03/05/2023	1	1.7 Plasma Arc Machining – principle, description of equipment,
	04/05/2023	1	1.7 Material removal rate, Process parameters, performance characterization, Applications.
14TH	08/05/2023	1	1.8 Electron Beam Machining - principle, description of equipment,
	09/05/2023	1	1.8 Material removal rate, Process parameters, performance characterization, Applications.
	10/05/2023	1	Revision
	11/05/2023	1	Revision
15TH	15/05/2023	1	Revision
	16/05/2023	1	Monthly Class test-02
	17/05/2023	1	Previous Year Questions Discussion
	18/05/2023	1	2 ND Internal examination
16TH	22/05/2023	1	Previous Year Questions Discussion