

**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: 6<sup>th</sup>

SEC: A

Sd/-  
H O D (Mech Engg.)

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**LESSON PLAN**

<b>Discipline:</b> Mechanical Engineering	<b>Semester: 6<sup>th</sup> A</b>		<b>Name of the teaching faculty:</b> Chiranjeevi Pattnaik
<b>Subject:</b> Advance Manufacturing Processes	<b>No. of Days/ per week class allotted:</b> 04 periods per week Mon-1 period, Tue-1 period, Thu-1 period, Fri - period)		<b>Semester From Date: 14-02-2023 To Date: 22-05-2023</b> No. of weeks: 16 weeks
<b>Week</b>	<b>Class Day</b>	<b>No of period available</b>	<b>Theory Topics</b>
1ST	14/02/2023	1	<b>3.0 Additive Manufacturing Process:</b> 3.1 Introduction, Need for Additive Manufacturing
	16/02/2023	1	3.2 Fundamentals of Additive Manufacturing
	17/02/2023	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,
	23/02/2023	1	3.4 Fundamental Automated Processes, Distinction between AM and CNC, other related technologies.
	24/02/2023	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

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**LESSON PLAN**

	28/02/2023	1	3.7 Concept of Flexible manufacturing process
4TH	02/03/2023	1	3.7 concurrent engineering, production tools like capstan and turret lathes,
	03/03/2023	1	3.7 rapid prototyping processes
5TH	06/03/2023	1	<b>4.0 Special Purpose Machines (SPM):</b> 4.1 Concept
	09/03/2023	1	4.1 General elements of SPM
	10/03/2023	1	4.1 Productivity improvement by SPM,
6TH	13/03/2023	1	4.1 Principles of SPM design.
	14/03/2023	1	<b>5.0 Maintenance of Machine Tools:</b> 5.1 Types of maintenance, 5.1 Repair cycle analysis,
	16/03/2023	1	5.1 Repair complexity <b>Monthly Class test-01</b>
	17/03/2023	1	5.1 Maintenance manuals Maintenance records, Housekeeping.
7TH	20/03/2023	1	5.1 Introduction to Total Productive Maintenance (TPM)
	21/03/2023	1	<b>2.0 Plastic Processing:</b>

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**LESSON PLAN**

	23/03/2023	1	2.1 Processing of plastics.
	24/03/2023	1	2.2 Moulding processes: Injection moulding,
8TH	27/03/2023	1	2.2 Compression moulding
	28/03/2023	1	2.2 Transfer moulding
	31/03/2023	1	2.3 Extruding 2.3 Casting
	03/04/2023	1	2.3 Calendering
9TH	04/04/2023	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
	13/04/2023	1	2.5 Applications of Plastics.
	11TH	17/04/2023	1
18/04/2023		1	1.2 Ultrasonic Machining: principle, Description of equipment, applications

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**LESSON PLAN**

	20/04/2023	1	1.3 Electric Discharge Machining: Principle, Description of equipment,
	21/04/2023	1	1.3 Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.
12TH	24/04/2023	1	1.4 Wire cut EDM: Principle, Description of equipment, controlling parameters; applications
	25/04/2023	1	1.5 Abrasive Jet Machining: principle,
	27/04/2023	1	<b>Internal examination</b>
	28/04/2023	1	<b>Internal examination</b>
13TH	01/05/2023	1	1.5 Abrasive Jet Machining: description of equipment, Material removal rate, application
	02/05/2023	1	1.5 Laser Beam Machining: principle, description of equipment, Material removal rate, application.
	04/05/2023	1	1.6 Electro-Chemical Machining: principle, description of equipment, Material removal rate, application.
14TH	08/05/2023	1	1.7 Plasma Arc Machining

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**LESSON PLAN**

			- principle, description of equipment,
	11/05/2023	1	1.7 Material removal rate, Process parameters, performance characterization, Applications.
	12/05/2023	1	1.8 Electron Beam Machining - principle, description of equipment,
15TH	15/05/2023	1	<b>Monthly Class test-02</b>  1.8 Material removal rate, Process parameters, performance characterization, Applications.
	16/05/2023	1	<b>2<sup>ND</sup> Internal examination</b>
	18/05/2023	1	<b>2<sup>ND</sup> Internal examination</b>
	19/05/2023	1	Previous Year Questions Discussion, Revision
16TH	22/05/2023	1	Previous Year Questions Discussion, Revision