

**GOVERNMENT POLYTECHNIC SONEPUR**

**DEPARTMENT OF MECHANICAL ENGINEERING**



**LESSON PLAN**

**FACULTY: Er PRABIR KUMAR SWAIN**

**ACADEMIC SESSION:2025-26(S)**

**SUBJECT: ADVANCED MANUFACTURING SYSTEM(TH-4)**

**SEMESTER & SECTION: 6<sup>TH</sup>**

  
H.O.D (Mechanical)

Govt. Polytechnic, Sonapur

Discipline: Mechanical Engg.	Semester:6 <sup>TH</sup>		Name of the Teaching Faculty: PRABIR KUMAR SWAIN Designation: LECTURER STAGE-II
Subject: ADVANCED MANUFACTURING PROCESS(TH-4)	No. of days/week class allotted:04 (MON.TUE,THU.)		Semester From date: 22.12.2025 To date: 18.04.2026 No. of weeks: 17
Week	Class Day		Theory/Practical Topics
1 <sup>ST</sup>	22.12.2025	1 <sup>st</sup>	Syllabus discussion and introduction to AMP
	23.12.2025	2 <sup>nd</sup>	1.1 Introduction – comparison with traditional machining
2 <sup>ND</sup>	29.12.2025	1 <sup>st</sup>	1.2 Ultrasonic Machining: principle, Description of equipment, applications.
	30.12.2025	2 <sup>nd</sup>	1.3 Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications.
	01.01.2026	3 <sup>rd</sup>	1.4 Wire cut EDM: Principle, Description of equipment, controlling parameters; applications
	01.01.2026	4 <sup>th</sup>	1.5 Abrasive Jet Machining: principle, description of equipment, Material removal rate, application
3 <sup>RD</sup>	12.01.2026	1 <sup>st</sup>	1.5 Laser Beam Machining: principle, description of equipment, Material removal rate, application
	13.01.2026	2 <sup>nd</sup>	1.6 Electro Chemical Machining: principle, description of equipment, Material removal rate, application
	15.01.2026	3 <sup>rd</sup>	1.7 Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications
	15.01.2026	4 <sup>th</sup>	1.8 Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.
4 <sup>TH</sup>	19.01.2026	1 <sup>st</sup>	Previous year semester question discussion
	20.01.2026	2 <sup>nd</sup>	Previous year semester question discussion
	22.01.2026	3 <sup>rd</sup>	<b>Class test-1</b>
	22.01.2026	4 <sup>th</sup>	2.1 Processing of plastics. 2.2 Moulding processes: Injection moulding
5 <sup>TH</sup>	27.01.2026	1 <sup>st</sup>	Compression moulding
	29.01.2026	2 <sup>nd</sup>	Transfer moulding

	29.01.2026	3 <sup>rd</sup>	Extruding; Casting; Calendering
6 <sup>TH</sup>	02.02.2026	1 <sup>st</sup>	2.4 Fabrication methods-Sheet forming, Blow moulding
	03.02.2026	2 <sup>nd</sup>	Laminating plastics (sheets, rods & tubes), Reinforcing.
	05.02.2026	3 <sup>rd</sup>	2.5 Applications of Plastics
	05.02.2026	4 <sup>th</sup>	Previous year question discussion
7 <sup>th</sup>	09.02.2026	1 <sup>st</sup>	Previous year question discussion
	10.02.2026	2 <sup>nd</sup>	<b>Class test-2</b>
	12.02.2026	3 <sup>rd</sup>	3.1 Introduction, Need for Additive Manufacturing
	12.02.2026	4 <sup>th</sup>	3.2 Fundamentals of Additive Manufacturing, AM Process Chain
8 <sup>TH</sup>	16.02.2026	1 <sup>st</sup>	3.3 Advantages and Limitations of AM, Commonly used Terms
	17.02.2026	2 <sup>nd</sup>	3.4 Classification of AM process
	19.02.2026	4 <sup>th</sup>	3.4 Classification of AM process
	19.02.2026	1 <sup>st</sup>	3.4 Classification of AM process
9 <sup>TH</sup>	23.02.2026	2 <sup>nd</sup>	3.4 Classification of AM process
	24.02.2026	3 <sup>rd</sup>	3.4 Classification of AM process
	26.02.2026	4 <sup>th</sup>	3.4 Classification of AM process
10 <sup>th</sup>	26.02.2026	1 <sup>st</sup>	3.4 Classification of AM process
11 <sup>th</sup>	02.03.2026	1 <sup>st</sup>	3.4 Classification of AM process
	05.03.2026	2 <sup>nd</sup>	3.4 Classification of AM process
	05.03.2026	3 <sup>rd</sup>	Fundamental Automated Processes, Distinction between AM and CNC, other related technologies
12 <sup>th</sup>	09.03.2026	1 <sup>st</sup>	3.5 Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.
	10.03.2026	2 <sup>nd</sup>	3.6 Web Based Rapid Prototyping Systems.
	012.03.2026	3 <sup>rd</sup>	3.7 Concept of Flexible manufacturing process,

	12.03.2026	4 <sup>th</sup>	concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes
13 <sup>th</sup>	16.03.2026	1 <sup>st</sup>	Previous year question discussion
	17.03.2026	2 <sup>nd</sup>	<b>Class test-3</b>
	19.03.2026	3 <sup>rd</sup>	4.1 Concept, General elements of SPM
	19.03.2026	4 <sup>th</sup>	Productivity improvement by SPM, Principles of SPM design.
14 <sup>th</sup>	23.03.2026	1 <sup>st</sup>	Productivity improvement by SPM, Principles of SPM design.
	24.03.2026	2 <sup>nd</sup>	Previous year question discussion
	26.03.2026	3 <sup>rd</sup>	<b>Class test-4</b>
	26.03.2026	4 <sup>th</sup>	5.1 Types of maintenance
15 <sup>th</sup>	30.03.2026	1 <sup>st</sup>	Repair cycle analysis, Repair complexity
	31.03.2026	2 <sup>nd</sup>	Maintenance manual, Maintenance records,
	02.04.2026	3 <sup>rd</sup>	Housekeeping. Introduction to Total Productive Maintenance (TPM).
	02.04.2026	4 <sup>th</sup>	Previous year question discussion
16 <sup>TH</sup>	06.04.2026	1 <sup>ST</sup>	<b>class test-5</b>
	07.04.2026	2 <sup>ND</sup>	revision
	09.04.2026	3 <sup>RD</sup>	revision
	09.04.2026	4 <sup>TH</sup>	revision
17 <sup>TH</sup>	13.04.2026	1 <sup>ST</sup>	revision
	16.04.2026	2 <sup>ND</sup>	revision
	16.04.2026	3 <sup>RD</sup>	revision
			<b>TOTAL NO OF CLASS - 59</b>

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