Lesson Plan

Discipline: Mechanical, **Semester**:6TH, **Name of Faculty :** TRUPTI MOHANTY		
Subject: Advance Manufacturing technology	**No. of days/ week Class allotted:** 4	**Semester From Date: 16.01.2024 To date : 26.04.2024**
Week	**Class Day**	**Theory**
1st	01	INTRODUCTION TO SUBJECT
	02	Modern Machining Processes: Introduction – comparison with traditional machining
	03	Ultrasonic Machining: principle, Description of equipment, applications
	04	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools electrodes
2nd	05	Electric Discharge Machining-Process parameters, Output characteristics, applications
	06	Wire cut EDM: Principle, Description of equipment
	07	Wire cut EDM: controlling parameters; applications.
	08	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.
3rd	09	Laser Beam Machining: principle, description of equipment,
	10	Laser Beam Machining-Material removal rate, application
	11	Electro Chemical Machining: principle, description of equipment
	12	Electro Chemical Machining-Material removal rate, application
4th	13	Plasma Arc Machining – principle, description of equipment
	14	Plasma Arc Machining –Material removal rate, Process parameters
	15	Plasma Arc Machining –performance characterization, Applications
	16	Electron Beam Machining - principle, description of equipment
5th	17	Electron Beam Machining -Material removal rate, Process parameters
	18	Electron Beam Machining -performance characterization, Applications
	19	CH-1 revision and important questions
	20	Quiz test
6th	21	**Plastic Processing:** Processing of plastics
	22	Moulding processes: Injection moulding, Compression moulding, Transfer moulding.
	23	Extruding; Casting; Calendering.
	24	Fabrication methods-Sheet forming
7th	25	Fabrication methods- Blow moulding
	26	Fabrication methods-Laminating plastics (sheets, rods & tubes)
	27	Fabrication methods--Reinforcing.
	28	Applications of Plastics

8th	29	CH-2 revision and important questions
	30	**Additive Manufacturing Process** - Introduction, Need for Additive Manufacturing
	31	Fundamentals of Additive Manufacturing, AM Process Chain
	32	Advantages and Limitations of AM, Commonly used Terms
9th	33	Classification of AM process, Fundamental Automated Processes
	34	Distinction between AM and CNC
	35	Other additive manufacturing related technologies.
	36	Application of additive manufacturing –Application in Design, Aerospace Industry, Automotive Industry
10th	37	Application of additive manufacturing - Jewelry Industry, Arts and Architecture
	38	Application of additive manufacturing -RP Medical and Bioengineering Applications
	39	Web Based Rapid Prototyping Systems
	40	Web Based Rapid Prototyping Systems
11th	41	Concept of Flexible manufacturing process, concurrent engineering,
	42	production tools like capstan and turret lathes
	43	Rapid prototyping processes.
	44	CH-3 revision and important questions
12th	45	Internal assessment
	46	IA evaluation
	47	Special Purpose Machines (SPM): Concept, General elements of SPM
	48	Productivity improvement by SPM
13th	49	Principles of SPM design
	50	Principles of SPM design
	51	CH-4revision and important questions
	52	**Maintenance of Machine Tools** -Types of maintenance
14th	53	Repair cycle analysis, Repair complexity
	54	Maintenance manual, Maintenance records, Housekeeping
	55	Introduction to Total Productive Maintenance (TPM).
	56	CH-5 revision and important questions
15th	57	Previous year question discussion
	58	Previous year question discussion
	59	Model question set and answers
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