LESSION PLAN

Discipline:- MECHANICAL ENGG.	SEM:-6TH	Name of Teaching Faculty: - Dr.LALATENDU DASH
SUB:-Advance Manufacturing Process	No of Days /per week class allotted:-4	Semester From Date:-13.02.2023 To Date:-23.05.2023 , No of Weeks:-15
Week	**Class Day**	**Theory Topics**
1ST	1st	Introduction, Comparison with Traditional machining.
	2nd	Ultrasonic Machining: Principle, applications.
	3rd	Description of equipment.
	4th	Electric discharge machining: Principle, Description of equipment.
2ND	1st	Dielectric fluid, tools (electrodes), process parameters.
	2nd	Output Characteristics, Applications.
	3rd	Wire cut EDM: Principle, Description of equipment.
	4th	Controlling Parameters, Applications.
3RD	1st	Abrasive jet Machining: Principle, Description of equipment.
	2nd	Material removal rate, Application.
	3rd	Laser Beam Machining: Principle, Description of equipment.
	4th	Material removal rate, Application
4TH	1st	Electro chemical Machining: Principle, Description of equipment.
	2nd	Material removal rate, Application
	3rd	Plasma Arc Machining: Principle, Description of equipment.
	4th	Material removal rate, Application
5TH	1st	Process Parameters, Performance Characterization,

	2nd	Electron Beam Machining: Principle, Description of equipment.
	3rd	Material removal rate, Application
	4th	Process Parameters, Performance Characterization,
6TH	1st	Plastic Processing: Processing of plastics.
	2nd	Moulding Processes: Injection moulding
	3rd	Compression moulding
	4th	Transfer moulding
7TH	1st	Extruding: Casting.
	2nd	Calendering.
	3rd	Fabrication methods: Sheet forming.
	4th	Blow molding, Reinforcing.
8TH	1st	Laminating plastics (sheets, rods &tubes),
	2nd	Applications of Plastics.
	3rd	Additive Manufacturing Process: Introduction, Need for Additive Manufacturing.
	4th	Fundamentals of Additive Manufacturing.
9TH	1st	AM Process Chain.
	2nd	Classification of AM process.
	3rd	Fundamental Automated Processes.
	4th	Distinction between AM and CNC, other related technologies.
10TH	1st	Application – Application in Design, Aerospace Industry, Automotive Industry, Jewelry industry
	2nd	Art and Architecture, Medical and Bio engineering Applications.
	3rd	Web Based Rapid Prototyping Systems.
	4th	Web Based Rapid Prototyping Systems.

11TH	1st	Web Based Rapid Prototyping Systems.
	2nd	Concept of Flexible manufacturing process,
	3rd	Concurrent engineering, production tools like capstan and turret lathes
	4th	Rapid prototyping processes.
12TH	1st	Discussion of Chapter &Assignment ,Questions
	2nd	Special Purpose Machines (SPM): Concept, General elements of SPM
	3rd	Special Purpose Machines (SPM): Concept, General elements of SPM
	4th	Productivity improvement by SPM
13TH	1st	Productivity improvement by SPM
	2nd	Productivity improvement by SPM
	3rd	Principles of SPM design
	4th	Principles of SPM design
14TH	1st	Maintenance of Machine Tools: Types of maintenance.
	2nd	Repair cycle analysis.
	3rd	Repair complexity.
	4th	Maintenance manual.
15TH	1st	Maintenance records.
	2nd	Housekeeping.
	3rd	Introduction to Total Productive Maintenance (TPM).
	4th	Discussion of Chapter & Assignment Questions

E.LEARNING RESOURCES:

Sl. No.	Name of Authors	Title of the Book	Name of the Publisher
1	O.P.KHANNA	Production technology –Vol-II	Dhanpat Rai Publication
2	B.S. Raghuwanshi	Workshop Technology, Vol – II	Dhanpat Rai Publication
3	HMT, Bangalore	Production Technology	Tata Mc-Graw Hill

4	Chua C.K., Leong K.F. and LIM C.S	Rapid prototyping: Principles and Applications	World scientific publication,third edition,2010
5	Stephen F. Krar & Arthur Gil	Exploring Advanced Manufacturing Technologies	Industrial Press