ATME College of Engineering

DEPARTMENT OF MECHANICAL ENGINEERING

Lesson Plan & Work-done Diary for AY:2025-26, Even Semester

Course with Code: Non-Traditional Machining -BME405A				Faculty: Dr. Chethan S			Semester & Section: 4th sem	
Class No.	**Date planned (DD/MM)**	**Topics to be covered**	**TLP Planned**	**Class No.**	**Date of Conduction (DD/MM)**	**Topics Covered**	**TLP Executed**	**Remarks if any deviation**
MODULE - 1								
1	25/02/2026	**Introduction to the subject** – Non-traditional machining process, Discussion on syllabus, Course outcome and Evaluation methods	PPT					
2	27/02/2026	Introduction to Non-traditional machining, Need for Non-traditional machining process	PPT					
3	02/03/2026	Comparison between traditional and non-traditional machining	PPT					
4	04/03/2026	General classification Non-traditional machining processes	PPT					
5	06/03/2026	Classification based on nature of energy employed in machining	PPT					
6	09/03/2026	Selection of non-traditional machining processes	PPT					
7	11/03/2026	Specific advantages, limitations of non-traditional machining processes	PPT					
8	13/03/2026	Applications of non-traditional machining processes	PPT					
		QUIZ on Module 1	M S Forms					

Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE - 2								
9	16/03/2026	**Ultrasonic Machining (USM):** Introduction, Equipment and material process	PPT					
10	18/03/2026	Effect of process parameters: Effect of amplitude and frequency, Effect of abrasive grain diameter, effect of slurry, tool & work material	PPT					
11	20/03/2026	Process characteristics: Material removal rate, tool wear, accuracy, surface finish,	PPT					
12	23/03/2026	Applications, advantages & limitations of USM	PPT					
13	25/03/2026	**Abrasive Jet Machining (AJM):** Introduction, Equipment and process of material removal	PPT					
14	27/03/2026	Process variables: carrier gas, type of abrasive, work material, stand-off distance (SOD)	PPT					
15	06/04/2026	Process characteristics-Material removal rate, Nozzle wear, accuracy & surface finish.	PPT					
16	08/04/2026	Applications, advantages & limitations of AJM	PPT					
		Assignment -1	Write-up/ Seminar					

Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE - 3								
17	13/04/2026	**Electrochemical Machining (ECM)** Introduction, Principle of electro chemical machining: ECM equipment, elements of ECM operation, Chemistry of ECM	PPT					
18	15/04/2026	ECM Process characteristics: Material removal rate, accuracy, surface finish, Process parameters	PPT					
19	17/04/2026	ECM Tooling, Electrochemical grinding and electrochemical honing process. Advantages, disadvantages and application of ECG, ECH	PPT					
20	22/04/2026	**Chemical Machining (CHM):** Elements of the process: Resists (maskants), Etchants	PPT					
21	24/04/2026	Types of chemical machining process chemical blanking process, chemical milling process	PPT					
22	27/04/2026	Process characteristics of CHM	PPT					
23	29/04/2026	Material removal rate, accuracy, surface finish	PPT					
24	04/05/2026	Advantages, limitations and applications of chemical machining process	PPT					
		Assignment -2	Write-up/ Seminar					

Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE - 4								
25	06/05/2026	**Electrical Discharge Machining (EDM):** Introduction, mechanism of metal removal	PPT					
26	08/05/2026	EDM equipment: spark erosion generator (relaxation type), dielectric medium-its functions & desirable properties, electrode feed control system	PPT					
27	13/05/2026	Flushing types; pressure flushing, suction flushing, side flushing, pulsed flushing	PPT					
28	15/05/2026	EDM process parameters, Advantages, limitations & applications of EDM, Electrical discharge grinding, Traveling EDM	PPT					
29	18/05/2026	**Plasma Arc Machining (PAM)** Introduction, non-thermal generation of plasma	PPT					
30	20/05/2026	PAM equipment mechanism of metal removal,	PPT					
31	22/05/2026	Plasma torch, process parameters Process characteristics	PPT					
32	25/05/2026	Safety precautions, applications, advantages and limitations	PPT					
		Assignment -3	Write-up/ Seminar					

Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE - 5								
33	27/05/2026	**Laser Beam Machining (LBM):** Introduction	PPT					
34	29/05/2026	Generation of LASER	PPT					
35	01/06/2026	Equipment and mechanism of metal removal	PPT					
36	03/06/2026	LBM parameters and characteristics	PPT					
37	05/06/2026	Applications, Advantages, limitations of LBM	PPT					
38	12/06/2026	**Electron Beam Machining (EBM)** -Introduction, Principle and working of EBM	PPT					
39	13/06/2026	Equipment and mechanism of metal removal	PPT					
40	15/06/2026	Applications, Advantages & limitations of EBM	PPT					
		QUIZ on Module 5	M S Forms					

	Activity	Planned	Actual	Remarks
1	Theory Classes	40		
2	Assignments/ Quizzes/ Self-study	03/02		
3	Tutorials/ Extra classes	00		
4	Internal Assessments	03		
5	ICT based Teaching (% of usage in Curriculum)	100		
Planning			**Execution**	
Faculty Signature :			**Faculty Signature :**	
HoD Signature :			**HoD Signature :**	