ATME College of Engineering

Lesson Plan & Work-done Diary for AY:2023-24, EVEN Semester

Course with Code: Mathematics-II for Mechanical Engineering Stream -BMATM201				Faculty:			Semester & Section: II	
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								
1		Prerequisite	Chalk and talk					
2		Numerical Solution of algebraic and transcendental equations	Chalk and talk					
3		Regula-falsi method	Chalk and talk					
4		Newton - Raphson method	Chalk and talk					
5		Newton's forward and backward interpolation formulae-Problems	Chalk and talk					
6		Interpolation formulae for unequal intervals- Newton's divided difference formula -problems	Chalk and talk					
7		Lagrange's interpolation - problems	Chalk and talk					
8		Numerical Integration- Trapezoidal rule formulae - problems	Chalk and talk					
9		Simpson's one third rule formulae - problems	Chalk and talk					
10		Simpson's three eighth rule- Problems	Chalk and talk					

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MODULE-1								
11		Prerequisite	Chalk and talk					
12		Scalar and vector point, Gradient, Unit normal vector, Directional derivativ	Chalk and talk					
13		Scalar and vector point, Gradient, Unit normal vector, Directional derivative.	Chalk and talk					
14		Directional derivative, angle between the surface.	Chalk and talk					
15		Introduction to divergence and curl F and physical interpretation .	Chalk and talk					
16		Solenoidal and irrotational.	Chalk and talk					
17		Line integrals. Application to work done by a force .	Chalk and talk					
18		Application to work done by a force and flux. Problems on Greens theorem	Chalk and talk					
19		Problems on Greens theorem	Chalk and talk					
20		Problems on Stoke’s theorem .	Chalk and talk					
21		Problems on Stoke’s theorem .	Chalk and talk					

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MODULE-2								
22		Prerequisite	Chalk and talk					
23		Vector spaces: Definition and examples, subspace, linear span, Linearly independent and dependent sets, Basis and dimension-Definition and examples	Chalk and talk					
24		Vector spaces: Definition and examples, subspace, linear span, Linearly independent and dependent sets, Basis and dimension-Definition and examples	Chalk and talk					
25		Algebra of transformations	Chalk and talk					
26		Matrix of a linear transformation.	Chalk and talk					
27		Change of coordinates, Rank and nullity of a linear operator, Rank-Nullity theorem.	Chalk and talk					
28		Change of coordinates, Rank and nullity of a linear operator, Rank-Nullity theorem.	Chalk and talk					
29		Inner product spaces and orthogonality.	Chalk and talk					

30		Inner product spaces and orthogonality.	Chalk and talk					

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MODULE-3								
31		Prerequisite	Chalk and talk					
32		Formation of PDE's by elimination of arbitrary constants	Chalk and talk					
33		Formation of PDE's by elimination of arbitrary constants and functions	Chalk and talk					
34		Formation of PDE's by elimination of arbitrary functions	Chalk and talk					
35		Solution of non- homogeneous PDE by direct integration	Chalk and talk					
36		Solution of non- homogeneous PDE by direct integration	Chalk and talk					
37		Homogeneous PDEs involving derivative with respect to one independent variable only	Chalk and talk					
38		Solution of Homogeneous and non-homogeneous PDE by direct integration	Chalk and talk					
39		Solution of Lagrange's linear PDE	Chalk and talk					
40		Solution of Lagrange's linear PDE	Chalk and talk					
41		Derivation of one dimensional heat and wave equations	Chalk and talk					

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MODULE-5								
41		prerequisite	Chalk and talk					
42		Numerical solution of ordinary differential equations of first order and first degree - Taylor's series method	Chalk and talk					
43		Numerical solution of ordinary differential equations of first order and first degree - Taylor's series method	Chalk and talk					
44		Taylor's series method	Chalk and talk					
45		Modified Euler's method	Chalk and talk					
46		Modified Euler's method	Chalk and talk					
47		Runge-Kutta method of fourth order	Chalk and talk					
48		Runge-Kutta method of fourth order	Chalk and talk					
49		Milne's predictor- corrector formula						
50		Milne's predictor- corrector formula						

	Activity	Planned	Actual	Remarks
1	Theory Classes	50		
2	Assignments/ Quizzes/ Self-study	2 Assignments 5 Quizzes		
3	Tutorials/ Extra classes	-		
4	Internal Assessments	3		
5	ICT based Teaching (% of usage in Curriculum)			
Planning			**Execution**	
Faculty Signature:			**Faculty Signature:**	
HoD Signature:			**HoD Signature:**	