



KSSEM

K.S. SCHOOL OF ENGINEERING AND MANAGEMENT BENGALURU - 560109
DEPARTMENT OF BASIC SCIENCE

SESSION: 2022-2023 (EVEN SEMESTER)

LESSON PLAN

NAME OF THE STAFF : NAGARATHNA T K

COURSE CODE/TITLE : BMATS201/ MATHEMATICS-II FOR COMPUTER SCIENCE AND ENGINEERING

SEMESTER/YEAR : II SEM- B SEC / I

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE 1							
1	Solution of polynomial and transcendental equations. Newton-Raphson methods	L+D	BLACK BOARD	1	1	26/5/2023	26/05/2023
2	Regula-Falsi method	L+D	BLACK BOARD	1	2	27/5/2023 29/5/2023	27/05/2023 29/05/2023
3	Finite differences - Interpolation/extrapolation using Newton's forward and backward difference	L+D	BLACK BOARD	1	3	30/5/2023	30/05/2023
4	Newton's divided difference	L+D	BLACK BOARD	1	4	31/5/2023	31/05/2023
5	Lagrange's formulae-problems	L+D	BLACK BOARD	1	5	31/5/2023	31/05/2023
6	Numerical integration: Simpson's 1/3 rule	L+D	BLACK BOARD	1	6	02/6/2023	02/06/2023
7	Elementary Numerical Methods: Finite differences - Interpolation/extrapolation using Newton's forward and backward difference	L+D	BLACK BOARD	1	7	05/6/2023	05/06/2023
8	Tutorials: Self-Study: Bisection method, Lagrange's inverse Interpolation.	L+D	BLACK BOARD	-	-	06/6/2023	06/06/2023
9	Tutorials: Applications: Estimating the approximate roots, extremum values, Area,	L+D	BLACK BOARD	-	-	07/6/2023	07/06/2023

	volume, and surface area. Errors in finite precision.						
10	Practicals: Solution of algebraic and transcendental equations by Ramanujan's, Regula-Falsi and Newton-Raphson method	L+D	BLACK BOARD	1	8	26/5/2023 27/5/2023 And 30/5/2023 02/6/2023	26/5/2023 27/5/2023 30/5/2023 02/6/2023
11	Practicals: Interpolation/Extrapolation using Newton's forward and backward difference formula	L+D	BLACK BOARD	1	9	06/6/2023 09/6/2023 And 13/6/2023 16/6/2023	13/6/2023 16/6/2023 20/6/2023 23/6/2023
12	Practicals: Computation of area under the curve using Trapezoidal, Simpson's (1/3)rd and (3/8)th rule	L+D	BLACK BOARD	1	10	20/6/2023 23/6/2023 And 30/6/2023 04/7/2023	30/6/2023 20/6/2023 23/6/2023
13	Revision	L+D	BLACK BOARD			07/6/2023 09/6/2023	14/06/2023
MODULE 2							
14	Numerical solutions of ODE's: First order first degree: Taylor series method-Problems	L+D	BLACK BOARD	2	12	12/6/2023 13/6/2023	13/06/2023 14/06/2023
15	Modified Euler's method-Problems	L+D	BLACK BOARD	2	14	14/6/2023 14/6/2023	14/6/2023 14/6/2023
16	Runge Kutta method of fourth order-Problems	L+D	BLACK BOARD	2	16	16/6/2023 19/6/2023	16/6/2023 19/6/2023
17	Milne's Predictor and Corrector method	L+D	BLACK BOARD	2	18	20/6/2023 21/6/2023	20/6/2023 21/6/2023
18	Tutorials: Self-Study: Adam-Bashforth method	L+D	BLACK BOARD	-		21/6/2023	21/6/2023 23/6/2023
19	Tutorials: Applications: Estimating the approximate solutions of ODE.	L+D	BLACK BOARD	-		23/6/2023	08/7/2023
20	Practicals: Solution of ODE of first order and first degree by Taylor's series and Modified Euler's method	L+D	BLACK BOARD	1	19	07/7/2023 And 11/7/2023	10/7/2023 10/7/2023
21	Practicals: Solution of ODE of first order and	L+D	BLACK	1	20	14/7/2023	11/7/2023

	first degree by Runge-Kutta 4th order and Milne's predictor-corrector method		BOARD			And 18/7/2023	14/7/2023 18/7/2023
22	Revision	L+D	BLACK BOARD			24/6/2023 30/6/2023	11/7/2023 12/7/2023
MODULE 3							
23	Vector Calculus: Vector Differentiation: Scalar and vector fields.	L+D	BLACK BOARD	1	21	03/7/2023	12/7/2023
24	Gradient, directional derivative; curl and divergence-physical interpretation	L+D	BLACK BOARD	1	22	04/7/2023	13/7/2023
25	Solenoidal and irrotational vector fields- Illustrative problems	L+D	BLACK BOARD	1	23	05/7/2023	18/7/2023
26	Curvilinear coordinates: Scale factors, base vectors, Cylindrical polar coordinates	L+D	BLACK BOARD	1	24	05/7/2023	19/7/2023
27	Spherical polar coordinates	L+D	BLACK BOARD	1	26	07/7/2023	19/7/2023
28	transformation between cartesian and curvilinear systems, orthogonality. Problems.	L+D	BLACK BOARD	2	28	08/7/2023 10/7/2023	20/7/2023 21/7/2023
29	Tutorials: Self-Study: Vector integration and Vector line integral.	L+D	BLACK BOARD	-	-	11/7/2023	24/7/2023
30	Tutorials: Applications: Conservation of laws, Electrostatics, Analysis of streamlines.	L+D	BLACK BOARD	-	-	12/7/2023	25/7/2023
31	Practicals: Finding gradient, divergent, curl and their geometrical interpretation	L+D	BLACK BOARD	1	29	21/7/2023 22/7/2023 And 25/7/2023	26/7/2023 26/7/2023 27/7/2023
32	Practicals: Computation of basis and dimension for a vector space and Graphical representation of linear transformation	L+D	BLACK BOARD	1	30	28/7/2023 And 04/8/2023 05/8/2023	28/7/2023 25/7/2023 28/7/2023
33	Revision	L+D	BLACK BOARD			12/7/2023 14/7/2023	28/7/2023 01/8/2023
MODULE 4							
34	Review of elementary integral calculus. Multiple integrals: Evaluation of double and triple integrals	L+D	BLACK BOARD	2	32	17/7/2023 18/7/2023	02/8/2023 02/8/2023

35	Evaluation of double integrals- change of order of integration	L+D	BLACK BOARD	1	33	19/7/2023	02/8/2023
36	Evaluation of double integrals- changing into polar co-ordinates.	L+D	BLACK BOARD	1	34	19/7/2023	04/8/2023
37	Applications to find area volume and centre of gravity	L+D	BLACK BOARD	2	36	21/7/2023 22/7/2023	05/8/2023 05/08/2023
38	Beta and Gamma functions: Definitions, Relation between beta and gamma functions	L+D	BLACK BOARD	2	38	24/7/2023 25/7/2023	16/8/2023 16/8/2023
39	Tutorials: Problem Solving Center of gravity, Duplication formula.	L+D	BLACK BOARD	-		26/7/2023	17/8/2023
40	Tutorials: Applications: Antenna and wave propagation, Calculation of optimum value in various geometries. Analysis of probabilistic models.	L+D	BLACK BOARD	-		26/7/2023	18/8/2023
41	Practical: Program to compute area, surface area, volume and centre of gravity	L+D	BLACK BOARD	1	39	08/8/2023 And 11/8/2023	01/08/2023 04/08/2023
42	Practical: Evaluation of improper integrals.	L+D	BLACK BOARD	1	40	18/8/2023 19/8/2023 And 22/8/2023	08/8/2023 04/8/2023
43	Revision	L+D	BLACK BOARD			28/7/2023 04/8/2023	18/8/2023
MODULE 5							
44	Vector spaces: Definition and examples, subspace, linear span	L+D	BLACK BOARD	1	41	05/8/2023	18/8/2023
45	Linearly independent and dependent sets,	L+D	BLACK BOARD	2	43	07/8/2023 08/8/2023	22/8/2023
46	Basis and dimension. Problems.	L+D	BLACK BOARD	1	44	09/8/2023	22/8/2023
47	Linear transformations: Definition and examples, Algebra of transformations, Matrix of a linear transformation	L+D	BLACK BOARD	2	46	09/8/2023 11/8/2023	22/8/2023
48	Change of coordinates, Rank and nullity of a linear operator, rank-nullity theorem	L+D	BLACK BOARD	2	48	14/8/2023 16/8/2023	23/8/2023


49	Inner product spaces and orthogonality. Problems.	L+D	BLACK BOARD	1	49	16/8/2023	23/8/2023
50	Tutorials: Problem solving Self-study: Angles and Projections. Rotation, Reflection, Contraction and Expansion	L+D	BLACK BOARD	-		18/8/2023	23/8/2023
51	Tutorials: Applications: Image processing, AI & ML, Graphs and networks, Computer graphics.	L+D	BLACK BOARD	-		19/8/2023	24/8/2023
52	Practical: Computing the inner product and orthogonality	L+D	BLACK BOARD	1	50	25/8/2023 29/8/2023 And 08/9/2023	8/8/2023 18/8/2023 09/08/2023
53	Revision	L+D	BLACK BOARD			21/8/2023 22/8/2023 23/8/2023	24/8/2023
54	Revision	L+D	BLACK BOARD			23/8/2023 25/8/2023 28/8/2023	25/8/2023
55	Revision	L+D	BLACK BOARD			29/8/2023 30/8/2023 30/8/2023 08/9/2023	29/8/2023

	Mode of Assignments and Instructions	Date
Assignment 1	Problem solving (Written Assignment)	
Assignment 2	Problem solving and Model question paper solutions	

Total No. of Lecture Hours = 40
 Total No. of Tutorial Hours = 10
 Total no. of Practical Classes = 10
 Revision = 18


 Course In charge


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