COURSE TEACHING STRUCTURE
Course: Engineering Mathematics-3

Dept: CIVIL ENGINEERING **Class: SE**

UNIT 1: LINEAR DIFFERENTIAL EQUATION
MARKS: 16
LECTURE: 12 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Complementory Function	1 Hr	Numerical	3
2	Perticular Integral	15 Min	Theoretical	0
3	General Method	1.15 Hrs	Numerical	6
4	Shortcut Methods	4.30 Hrs	Numerical	13
5	Method Of Variation Of Parameters	1.45 Hrs	Numerical	7
6	Cauchy's DE	50 Min	Numerical	7
7	Legender's DE	40 Min	Numerical	7
8	Simultaneous DE	1 Hrs	Numerical	6
9	Symmetric Simultaneous DE	45 Min	Numerical	5

UNIT 2: NUMERICAL METHODS
MARKS: 14
LECTURE: 12 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Gauss Elimination Method	1 Hr	Numerical	5
2	Cholesky	1.30 Hrs	Numerical	5
3	Jacobi	30 Min	Numerical	5
4	Gauss-Seidel Methods	30 Min	Numerical	4
5	Euler's Methods	2 Hrs	Numerical	4
6	Modified Euler's Methods	3 Hrs	Numerical	5
7	Runge-Kutta 4th Order	3 Hrs	Numerical	6
8	Predictor-Corrector Methods	30 Min	Numerical	5

UNIT 3: STATISTICS AND PROBABILITY
MARKS: 17
LECTURE: 12 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
	STATISTICS			
1	Measures Of Central Tendency	1 Hr	Numerical	4
2	Measures Of Dispersion	1 Hr	Numerical	6
3	Coefficient Of Variation	1 Hr	Numerical	7
4	Moments, Skewness & Kurtosis	1 Hr	Numerical	7
5	Correlation And Regression	1 Hr	Numerical	7
6	Reality Of Regression Estimates	1 Hr	Numerical	4
	PROBABILITY			
1	Probability Density Function	1 Hr	Numerical	5
2	Bionomial Distribution	2 Hrs	Numerical	7
3	Poisson's Distribution	1 Hr	Numerical	7
4	Normal & Hypergeometric	1 Hr	Numerical	7
5	Test Of Hypothesis: Chi-Square & T Test	1 Hr	Numerical	6

UNIT 4: VECTOR DIFFRENTIAL CALCULUS
MARKS: 18
LECTURE: 13 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Vector Differentiation - Gradient, Divergence And Curl	4 Hrs	Numerical	7
2	Directional Derivative	3 Hrs	Numerical	7
3	Solenoidal And Irrotational Fields	3 Hrs	Numerical	5
4	Vector Identities	3 Hrs	Numerical	6

UNIT 5: VECTOR INTEGRAL CALCULUS & APPLICATIONS
MARKS: 18
LECTURE: 13 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Line, Surface And Volume Integrals	2 Hrs	Numerical	6
2	Work-Done	2 Hrs	Numerical	6
3	Green's Lemma	1 Hr	Numerical	6
4	Gauss's Divergence Theorem	3 Hrs	Numerical	7
5	Stoke's Theorem	3 Hrs	Numerical	6
6	Application To Problems In Electro-Magnetic Fields	2 Hrs	Derivations	6

UNIT 6: APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS (PDE)
MARKS: 18
LECTURE: 10 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Modeling Of Vabrating String, Wave Equations	3 Hrs	Derivations	8
2	One Dimensional Heat Flow	2 Hrs	Derivations	7
3	Two Dimensional Heat Flow	3 Hrs	Derivations	7
4	Application Of PDE To Problems Of Civil And Allied Engineering	2 Hrs	Derivations	8