

COURSE TEACHING STRUCTURE

Course: Engineering Mathematics-3

Dept: MECHANICAL ENGINEERING

Class: SE

UNIT 1: LINEAR DIFFERENTIAL EQUATION

MARKS: 16

LECTURE: 12 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Complementary 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: TRANSFORMS

MARKS: 14

LECTURE: 12 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
	FOURIER TRANSFORM			
1	Fourier Integral Theorem	1 Hr	Numerical	5
2	Fourier Sine & Cosine Integrals	1 Hr	Numerical	5
3	Fourier Transform	40 Min	Numerical	5
4	Fourier Sine Inverse	45 Min	Numerical	4
5	Fourier Cosine Inverse	30 Min	Numerical	4
6	Discrete Fourier Transform	40 Min	Numerical	5

LAPLACE TRANSFORM

1	Defination Of LT	1 Hr	Theoretical	0
2	Inverse LT	2 Hrs	Numerical	5
3	Properties And Thneorems	1 Hr	Numerical	8
4	LT Of Standard Functions	2 Hrs	Numerical	8

5	LT Of Some Special Functions	30 Min	Numerical	6
6	Application Of LT For Solving LDE	1.30 Hrs	Numerical	7

UNIT 3: STATISTICS

MARKS: 17

LECTURE: 06 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Measures Of Central Tendency	30 Min	Numerical	4
2	Measures Of Dispersion	50 Min	Numerical	6
3	Coefficient Of Variation	30 Min	Numerical	7
4	Moments, Skewness & Kurtosis	1 Hr	Numerical	7
5	Curve Fitting: Fitting Of Straight Line, Parabola And Other Curves	1.15 Hrs	Numerical	6
6	Correlation And Regression	1.35 Hrs	Numerical	7
7	Reality Of Regression Estimates	20 Min	Numerical	4

UNIT 4: PROBABILITY AND PROBABILITY DISTRIBUTION

MARKS: 18

LECTURE: 06 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Bayes Theorem	30 Min	Numerical	4
2	Random Variables	20 Min	Numerical	6
3	Mathematical Expectation	20 Min	Numerical	6
4	Probability Density Function	20 Min	Numerical	5
5	Bionomial Distribution	1.35 Hrs	Numerical	7
6	Poisson's Distribution	1.15 Hrs	Numerical	7
7	Normal & Hypergeometric	1 Hr	Numerical	7
8	Test Of Hypothesis: Chi-Square & T Test	40 Min	Numerical	6

UNIT 5: VECTOR CALCULUS

MARKS: 17

LECTURE: 15 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Vector Differentiation - Gradient, Divergence And Curl	1 Hr	Numerical	7
2	Directional Derivative	2 Hrs	Numerical	7
3	Solenoidal And Irrotational Fields	2 Hrs	Numerical	5
4	Vector Identities	2 Hrs	Numerical	6
5	Line, Surface And Volume Integrals	2 Hrs	Numerical	7
6	Green's Lemma	1 Hr	Numerical	8
7	Gauss's Divergence	3 Hrs	Numerical	8
8	Stoke's Theorem	2 Hrs	Numerical	7

UNIT 6: APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS (PDE)

MARKS: 18

LECTURE: 10 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
1	Modeling Of Vibrating 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