COURSE TEACHING STRUCTURE
Course: Engineering Mathematics-3

Dept: BIOTECHNOLOGY 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: LAPLACE TRANSFORMS
MARKS: 14
LECTURE: 08 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
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: FOURIER TRANSFORMS
MARKS: 16
LECTURE: 09 HOURS

SR NO	TOPIC	DURATION	TOPIC BASED	MARKING SKIM
	FOURIER TRANSFORM			
1	Fourier Integral Theorem	1.30 Hrs	Numerical	5
2	Fourier Sine & Cosine Integrals	1.30 Hrs	Numerical	5
3	Fourier Transform	2 Hrs	Numerical	5
4	Fourier Sine Inverse	2 Hrs	Numerical	4
5	Fourier Cosine Inverse	1 Hrs	Numerical	4
6	Discrete Fourier Transform	1 Hrs	Numerical	5

UNIT 4: 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 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 Divergance	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 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