

EC/EE/IN/CS/IT/ME
ENGINEERING MATHEMATICS
MODULE – 1

INDEX

Sr. No.	Contents	Topics	Pg. No.
1.	PROBABILITY		
	Notes	Probability	1
		Permutation	2
		Combinations	3
		Conditional Probability	7
		Baye's Rule	8
		Random Variables and Distributions	8
		Standard Distributions	9
		Weibull Distribution	13
		The Method of Least Squares	13
		Analysis of Variance	14
		List of Formulae	16
		Assignment – 1	18
	Assignment – 2	20	
	Assignment – 3	23	
	Test Paper – 1	25	
	Test Paper – 2	27	
	Test Paper – 3	29	

Sr. No.	Contents	Topics	Pg. No.
2. LINEAR ALGEBRA			
	Notes	Determinants	31
		Minors and Co-Factors	32
		Product of Determinants (Jacobi Theorem)	33
		Matrices	38
		Rank of a Matrix	42
		Orthogonal Matrix	43
		Vectors	48
		Eigen Values and Eigen Vectors	50
	Assignment – 1	53	
	Assignment – 2	56	
	Assignment – 3	59	
	Assignment – 4	62	
	Assignment – 5	65	
	Assignment – 6	68	
	Assignment – 7	71	
	Assignment – 8	74	
	Test Paper – 1	77	
	Test Paper – 2	80	
	Test Paper – 3	82	
	Test Paper – 4	84	
Test Paper – 5	86		
Test Paper – 6	88		
3. NUMERICAL METHODS			
	Notes	Introduction	91
		The Bisection Method	91
		Newton Raphson Method	94
		Numerical Differentiation	95
		Backward Difference Operator ∇	95
		Taylor Series Method	103
		Picard's Method	104
		Euler's Method	105
		List of Formulae	107
	Assignment – 1	108	
	Assignment – 2	111	
	Test Paper – 1	114	

SOLUTIONS

Sr. No.	Contents	Topics	Pg. No.
1. PROBABILITY			
	Assignment	Answer Key	117
		Model Solutions	118
	Test Paper	Answer Key	130
		Model Solutions	131
2. LINEAR ALGEBRA			
	Assignment	Answer Key	140
		Model Solutions	142
	Test Paper	Answer Key	162
		Model Solutions	164
3. NUMERICAL METHODS			
	Assignment	Answer Key	176
		Model Solutions	177
	Test Paper	Answer Key	186
		Model Solutions	187
