STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: June - November 2024

Department : Mathematics
Name/s of the Faculty : S Mercy Soruparani
Course Title : Integral Transforms
Course Code : 19MT/MC/IT54
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Jun 19 – 26, 2024 (Day Order 1 - 6) Hrs5	Unit 1: Laplace Transform 1.1 Definition of Laplace Transform 1.2 Laplace Transform of e^{-at}, *cosat*, *sinat* and t^n	Lecture	Narayanan S. and T.K. Manicavachagam Pillay T. K., Calculus - Volume III.	Questioning
Jun 27 – July 4, 2024 (Day Order 1 - 6) Hrs5	1.3 Laplace Transform of Periodic Functions 1.4 Some General Theorems 1.5 Evaluation of Integrals using Laplace Equations	Problem solving		Problem Solving
July 5 – 12, 2024 (Day Order 1 - 6) Hrs5	1.6 Inverse Laplace Transform Unit 2: Application of Laplace Transform to Differential Equations	Discussion		Test 25 Marks Unit 1 : 1.1-1.3
July 15 – 23, 2024 (Day Order 1 - 6) Hrs5	2.1 Laplace Transform to Solve System of Differential Equations with Constant Coefficient 2.2 Laplace Transform to Solve Ordinary Differential Equations with Variable Coefficients	Derivation	S. Santha, Transforms and Partial Differential Equations,	Assignment
July 24 – 31, 2024 (Day Order 1 - 6) Hrs5	2.3 Laplace Transform to solve Differential Equations Involving Integrals 2.4 Laplace Transform to Evaluate Certain Integrals	Lecture		Quiz
Aug 1 – 5, 2024 (Day Order 1 –3) Hrs2	Unit 3: Fourier Transform 3.1 Definition of Fourier Transform	Problem solving		
Aug 6 – 10, 2024	**C.A. Test – I (Unit 1:1.4-1.6 & Unit 2)**			

Aug 12 – 14, 2024 (Day Order 4-6) Hrs3	3.2 Fourier Integral Theorem	Discussion	S. Sankarappan, S. Kalavathy, S. Santha, B. Praba, Applied Mathematics	Questioning
Aug 16 – 23, 2024 (Day Order 1-6) Hrs5	3.3 Fourier Transform Pair	Derivation		Problem Solving
Aug 27 – Sep 3, 2024 (Day Order 1-6) Hrs5	3.4 Properties of Fourier Transforms Unit 4: Z - Transforms 4.1 Definition of Z – Transform	Lecture	A.R. Vasishtha and R.K. Gupta, Integral Transforms	Test 25 Marks Unit 3: 3.1-3.2
Sep 4 – 11, 2024 (Day Order 1-6) Hrs5	4.2 Z – Transforms of Some Standard Sequences	Problem solving		Assignment
Sep 12 - 20, 2024 (Day Order 1- 6) Hrs5	4.3 Existence of Z – Transform	Discussion		Problem Solving
Sep 23 - 26, 2024 (Day Order 1-4) Hrs3	4.4 Properties of Z – Transform 4.5 Initial and Final Value Theorem	Derivation	Donald A. McQuarrie, Mathematical Methods for Scientists & Engineers	Quiz
Sep 27 – Oct 3, 2024	**C.A. Test – II(Unit 3:3.3-3.4 & Unit 4)**			
Oct 4 – 5, 2024 (Day 5 & 6) Hrs2	Unit 5: Z – Transform (contd.) 5.1 Inverse Z – Transform	Derivation		Quiz
Oct 7 - 15, 2024 (Day Order 1 to 6) Hrs5	5.2 Evaluation of Inverse Z – Transform – Power Series Method, Partial Fraction Method, Inversion Integral Method	Lecture	Baidyanath Patra, An Introduction to Integral Transforms	Test
Oct 16 - 22, 2024 (Day Order 1 to 6) Hrs5	5.3 Solution of Difference Equations using Z– Transform	Discussion	Erwin Kreyszig, Advanced Engineering Mathematics	Problem solving
Oct 23 - 24, 2024 (Day Order 1 to 2)	**REVISION**			