STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: June - November 2024

Department : MATHEMATICS

Name of the Faculty : Dr. AMALORE ARUMICA

Course Title : INTEGRAL TRANSFORMS

Course Code : 19MT/MC/IT54

Shift : II

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Jun 19 – 26, 2024 (Day Order 1 - 6) 5 hours	Unit 1 **Laplace Transform** 1.1 Definition of Laplace Transform 1.2 Laplace Transform of e^-at , cos at , sin at and n t , where a is a Positive Integer	Lecture Problem Solving	Narayanan S. and T.K. Manicavachagam Pillay T. K., Calculus - Volume III. Madras: S. Viswanathan, 2006.	Questioning
Jun 27 – July 4, 2024 (Day Order 1 - 6) 5 hours	Unit 1 **Laplace Transform** 1.3 Laplace Transform of Periodic Functions 1.4 Some General Theorems	Lecture Problem solving	Narayanan S. and T.K. Manicavachagam Pillay T. K., Calculus - Volume III. Madras: S. Viswanathan, 2006.	Slip Test
July 5 – 12, 2024 (Day Order 1 - 6) 5 hours	Unit 1 **Laplace Transform** 1.5 Evaluation of Integrals using Laplace Equations 1.6 Inverse Laplace Transform Unit 2 **Application of Laplace Transform to Differential Equations** 2.1 Laplace Transform to	Lecture Problem solving	S. Sankarappan, S. Kalavathy, S. Santha, B. Praba, Applied Mathematics, Vijay Nicole Imprints Private Limited, Chennai, 2009.	Quiz

	Solve System of Differential Equations with Constant Coefficient			
July 15 – 23, 2024 (Day Order 1 - 6) 5 hours	Unit 2 **Application of Laplace Transform to Differential Equations** 2.2 Laplace Transform to Solve Ordinary Differential Equations with Variable Coefficients	Lecture Problem solving	Narayanan S. and T.K. Manicavachagam Pillay T. K., Calculus - Volume III. Madras: S. Viswanathan, 2006.	III Component Problem Assignment from Unit 1 (20 marks)
July 24 – 31, 2024 (Day Order 1 - 6) 5 hours	Unit 2 **Application of Laplace Transform to Differential Equations** 2.3 Laplace Transform to solve Differential Equations Involving Integrals	Lecture Problem Solving	Narayanan S. and T.K. Manicavachagam Pillay T. K., Calculus - Volume III. Madras: S. Viswanathan, 2006.	Questioning
Aug 1 – 5, 2024 (Day Order 1 - 3) 3 hours	Unit 2 **Application of Laplace Transform to Differential Equations** 2.4 Laplace Transform to Evaluate Certain Integrals	Lecture Problem Solving	Narayanan S. and T.K. Manicavachagam Pillay T. K., Calculus - Volume III. Madras: S. Viswanathan, 2006.	Questioning
Aug 6 – 10, 2024	**C.A. Test – I** (Units 1 and 2)			
Aug 12 – 14, 2024 (Day Order 4-6)	Unit 3 **Fourier Transform** 3.1 Definition of Fourier Transform	Lecture Problem solving	S. Santha, Transforms and Partial Differential Equations, Vijay Nicole Imprints Private Limited,	Quiz

2 hours			Chennai, 2009.	
Aug 16 – 23, 2024 (Day Order 1-6) 5 hours	Unit 3 **Fourier Transform** 3.2 Fourier Integral Theorem 3.3 Fourier Transform Pair	Lecture Problem solving	Baidyanath Patra, An Introduction to Integral Transforms, Levant Books, India, 2016.	Questioning
Aug 27 – Sep 3, 2024 (Day Order 1-6) 5 hours	Unit 3 **Fourier Transform** 3.4 Properties of Fourier Transforms	Lecture	S. Santha, Transforms and Partial Differential Equations, Vijay Nicole Imprints Private Limited, Chennai, 2009.	Questioning
Sep 4 – 11, 2024 (Day Order 1-6) 5 hours	Unit 4 **Z – Transforms** 4.1 Definition of Z – Transform 4.2 Z – Transforms of Some Standard Sequences	Lecture	Donald A. McQuarrie, Mathematical Methods for Scientists & Engineers, Viva Books Pvt. Ltd. New Delhi, 2009.	Questioning
Sep 12 - 20, 2024 (Day Order 1- 6) 5 hours	Unit 4 **Z – Transforms** 4.3 Existence of Z – Transform 4.4 Properties of Z – Transform	Lecture	S. Santha, Transforms and Partial Differential Equations, Vijay Nicole Imprints Private Limited, Chennai, 2009.	III Component Quiz from Unit 3 (10 marks)
Sep 23 - 26, 2024 (Day Order 1-4) 4 hours	Unit 4 **Z – Transforms** 4.5 Initial and Final Value Theorem Unit 5 **Z – Transforms (contd.)** 5.1 Inverse Z – Transform	Lecture	S. Santha, Transforms and Partial Differential Equations, Vijay Nicole Imprints Private Limited, Chennai, 2009.	Questioning
Sep 27 – Oct 3, 2024	**C.A. Test – II** (Units 3 and 4)			
Oct 4 – 5, 2024 (Day 5 & 6)	Unit 5 **Z – Transforms (contd.)** 5.2 Evaluation of Inverse	Lecture	S. Santha, Transforms and Partial Differential Equations, Vijay Nicole	Questioning

1 hour	Z – Transform – Power Series Method		Imprints Private Limited, Chennai, 2009.	
Oct 7 - 15, 2024 (Day Order 1 to 6) 5 hours	Unit 5 **Z – Transforms (contd.)** 5.2 Partial Fraction Method, Inversion Integral Method	Lecture	S. Santha, Transforms and Partial Differential Equations, Vijay Nicole Imprints Private Limited, Chennai, 2009.	III Component Test from Unit 5 (20 marks)
Oct 16 - 22, 2024 (Day Order 1 to 6) 5 hours	Unit 5 **Z – Transforms (contd.)** 5.3 Solution of Difference Equations using Z – Transform	Lecture Problem solving	S. Santha, Transforms and Partial Differential Equations, Vijay Nicole Imprints Private Limited, Chennai, 2009.	Slip Test
Oct 23 - 24, 2024 (Day Order 1 to 2) 2 hours	**REVISION**			