

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

COURSE PLAN (June - November 2026)

Department : Mathematics
Name of the Faculty : Dr. Rini Angeline Sahayamary A
Course Title : INTEGRAL TRANSFORMS
Course Code : 23MT/MC/IT54
Shift : II

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	recall the suitable techniques of differential and integral calculus and concepts of differential equations to solve Laplace, Fourier and Z - transforms	K1
CO2	understand the concepts involved in Laplace, Fourier and Z - transforms	K2
CO3	apply the concepts of the integral transforms under study to solve problems of differential and difference equations	K3
CO4	analyse the problems based on Laplace, Fourier and Z - transforms	K4
CO5	evaluate Laplace, Fourier and Z - transforms of various functions using the appropriate methods	K5

July 9 – 16, 2026 (Day Order 1- 6)	2	Application of Laplace Transform to Differential Equations 2.2 Laplace Transform to Solve Ordinary Differential Equations with Variable Coefficients	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Problem Solving
July 17 – 24, 2026 (Day Order 1- 6)	2	Application of Laplace Transform to Differential Equations 2.3 Laplace Transform to solve Differential Equations Involving Integrals 2.4 Laplace Transform to Evaluate Certain Integrals	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Problem solving
July 25 – 28, 2026 (Day Order 1- 3)	2&3	Application of Laplace Transform to Differential Equations 2.4 Laplace Transform to Evaluate Certain Integrals Fourier Transforms 3.1. Definition of Fourier Transforms, Fourier Cosine Transform & Fourier Sine Transform	K1-K5	1+2=3	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Problem solving
July 29 – Aug 3, 2026	C.A. Test – I (Unit 1 & 2)						

Aug 4 - 6, 2026 (Day Order 4 - 6)	3	Fourier Transforms 3.2.Alternative Form of Fourier Complex Integral Formula	K1-K5	2	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Questioning & Problem Solving
Aug 7 – 14, 2026 (Day Order 1- 6)	3	Fourier Transforms 3.2 Alternative Form of Fourier Complex Integral Formula 3.3.Relationship between Fourier Transform and Laplace Transform	K1-K5	2+3=5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Problem Solving
Aug 17 - 24, 2026 (Day Order 1- 6)	3&4	Fourier Transforms 3.3 Relationship between Fourier Transform and Laplace Transform 3.4 Properties of Fourier Transform Z-Transforms 4.1 Definition of Z–Transforms 4.2 Properties of Z–Transforms	K1-K5	3+2=5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Slip Test
Aug 25 – Sep 2, 2026 (Day Order 1- 6)	4	Z-Transforms 4.2 Properties of Z–Transforms 4.3 Z–Transforms of Some Basic Functions	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Questioning & Problem Solving

Sep 3 – 11, 2026 (Day Order 1- 6)	4	Z-Transforms 4.2 Properties of Z–Transforms 4.3 Z–Transforms of Some Basic Functions	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Problem Solving & III Component Assignment (10 marks)
Sep 15-17, 2026 (Day Order 1 - 3)	4	Z-Transforms 4.3 Z–Transforms of Some Basic Functions Inverse Z–Transforms 5.1 Inverse Z–Transforms	K1-K5	1+2=3	CO1-5	Lecture, Group Discussion and Presentations Learning by Doing Problems	Questioning & Problem Solving
Sep 18 –23, 2026	C.A. Test – II (Unit 3 & 4)						
Sep 24 - 28, 2026 (Day Order 4 – 6)	5	Inverse Z–Transforms 5.2 Evaluation of Inverse Z–Transforms using Expansion Method, Long Division Method - Partial Fractions Method - by Cauchy’s Residue Theorem	K1-K5	2	CO1-5	Lecture, Group Discussion Learning by Doing Problems	Problem solving
Sep 29 – Oct 7, 2026 (Day Order 1 - 6)	5	Inverse Z–Transforms 5.2 Evaluation of Inverse Z–Transforms using Expansion Method, Long Division Method - Partial	K1-K5	5	CO1-5	Lecture, Group Discussion and Presentations	III Component Test -2 Unit 5- sections 5.1, 5.2

		Fractions Method - by Cauchy's Residue Theorem					(25 marks)
Oct 8 - 14, 2026 (Day Order 1 - 6)	2	Inverse Z-Transforms 5.3 Formation of Difference equations and Use of Z- Transform to Solve them	K1-K5	5	CO1-5	Lecture, Group Discussion and Presentations Learning by Doing Problems	Questioning & Problem Solving
Oct 15 - 17, 2026 (Day Order 1- 3)	REVISION						