

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI**COURSE PLAN (June - November 2026)****Department : Mathematics****Name/s of the Faculty : Dr. Arul Roselet Meryline S****Course Title : CALCULUS****Course Code : 25MC/MC/CL15****Shift : II****COURSE OUTCOMES (COs)**

COs	Description	CL
CO1	recall and explain the fundamental concepts of differential calculus and integration	K1
CO2	understand derivative techniques and integral concepts to study complex K2 functions.	K2
CO3	identify appropriate methods to solve differential calculus problems and apply standard techniques to evaluate integrals.	K3
CO4	analyze calculus results through illustrative examples and identify techniques for computing multiple integrals.	K4
CO5	predict appropriate methods to find the solution of problems on calculus	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 22, 2026 (Day Order 6)	1	Successive Differentiation 1.1 Successive Differentiation - nth derivative	K1-K5	1	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Questioning
Jun 23 – July 1, 2026 (Day Order 1- 6)	1	Successive Differentiation 1.2 Standard results	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Questioning
July 2 – July 8, 2026 (Day Order 1- 6)	1	Successive Differentiation 1.3 Leibnitz Theorem(without Proof) and its applications	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Slip Test
July 9 – 16, 2026 (Day Order 1- 6)	1 2	Successive Differentiation 1.2 Standard results Envelopes 2.1. Methods of finding envelopes 2.2. Curvature	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	III Component 1 Test Unit 1- section 1.1 (15 Marks)

July 17 – 24, 2026 (Day Order 1- 6)	2	Envelopes 2.3. Circle, radius, Centre of Curvature 2.4. Involutives and Evolutes	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Questioning & Problem Solving
July 25 – 28, 2026 (Day Order 1- 3)	2	Envelopes 2.5 Cartesian and Polar formula for the radius of curvature.	K1-K5	3	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Questioning
July 29 – Aug 3, 2026	C.A. Test – I (Unit 1 & 2-2.1 to 2.5)						
Aug 4 - 6, 2026 (Day Order 4 - 6)	2	Envelopes 2.6. Co-ordinates of Centre of Curvature 2.7. Jacobians	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	Methods of Integration 3.1. Reduction formulae: 3.2. $\int e^{ax} \cos bx \, dx$, $\int e^{ax} \sin bx \, dx$ 3.3. $\int \sin^m x \cos^n x \, dx$ (m, n being positive integers)	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	III Component 2 Assignment &Test Unit 3- section 3.1 (15 marks)
Aug 17 - 24, 2026 (Day Order 1- 6)	3	Methods of Integration 3.4. $\int x^m (\log x)^n \int x^m (\log x)^n dx$	K1-K5	5	CO1-5	Lecture and Group Discussion	Questioning & Problem Solving

		3.5. $\int \cos^m x \cos nx \, dx$, $\int \sin^m x \cos nx \, dx$				Learning by Doing Problems	
Aug 25 – Sep 2, 2026 (Day Order 1- 6)	3 4	Methods of Integration 3 .6. Bernoulli's formula Multiple Integrals 4.1. Definition of the double integral	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	Multiple Integrals 4.2. Evaluation of double integrals 4.3 Double integral in polar coordinates	K1-K5	5	CO1-5	Lecture and Group Discussion Learning by Doing Problems	Questioning & Problem Solving
Sep 15-17, 2026 (Day Order 1 - 3)	4	Multiple Integrals 4.4. Triple integrals	K1-K5	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 & Unit 4 (4.3))						
Sep 24 - 28, 2026 (Day 4 – 6)	5	Beta and Gamma functions 5.1 Definitions of Beta and Gamma Integrals	K1-K5	2	CO1-5	Lecture, Group Discussion and Presentations	Questioning & Problem Solving

