

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

COURSE PLAN (June - November 2026)

Department : Mathematics
Name of the Faculty : Dr. Benazir Obilia X A
Course Title : PRINCIPLES OF REAL ANALYSIS
Course Code : 23MT/MC/RA55
Shift : II

COURSE OUTCOMES (COs)

COs	Description						CL
CO1	define and recall the abstract mathematical concepts on the real line and metric spaces						K1
CO2	illustrate the theoretical concepts using relevant examples						K2
CO3	identify potential solutions to problems involving limit, continuity, uniform continuity, convergence, derivatives and integration						K3
CO4	analyse the abstract concepts and choose appropriate methods for uniform continuity, convergence, derivatives and integration proving the theoretical results						K4
CO5	compare the various methods in mathematical analysis that can be K5 applied to evaluate analytical problems						K5
Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 15 – 22, 2026 (Day Order 1- 6)	1	Limits and Continuity on $\mathbb{R}^1$	K1-K5	5	CO1-5	Lecture, Discussions	Questioning

		1.1 Limit of a Function on the Real Line 1.2 Functions Continuous at a Point on the Real Line				and Problem Solving	
Jun 23 – July 1, 2026 (Day Order 1- 6)	1	Limits and Continuity on $\mathbb{R}^1$ 1.2 Functions Continuous at a Point on the Real Line (continuation) 1.3 Reformulation	K1-K5	5	CO1-5	Lecture, Discussions and Problem Solving	Questioning
July 2 – July 8, 2026 (Day Order 1- 6)	1 2	Metric Spaces 1.4 Definitions with Examples Limits and Continuity on Metric Spaces 2.1 Limits in Metric Spaces	K1-K5	5	CO1-5	Lecture, Discussions and Problem Solving	Questioning
July 9 – 16, 2026 (Day Order 1- 6)	2	Limits and Continuity on Metric Spaces 2.2 Functions Continuous on a Metric Space 2.3 Open Sets	K1-K5	5	CO1-5	Lecture, Discussions and Problem Solving	Questioning & III Component 1 – MCQ Test Unit 1 [15 marks]
July 17 – 24, 2026 (Day Order 1- 6)	2	Limits and Continuity on	K1-K5	5	CO1-5	Lecture, Discussions	Questioning

		Metric Spaces 2.4 Closed Sets				and Problem Solving	
July 25 – 28, 2026 (Day Order 1- 3)	3	Connectedness and Completeness on Metric Spaces 3.1 Connected Sets	K1-K5	3	CO1-5	Lecture, Discussions and Problem Solving	Questioning
July 29 – Aug 3, 2026	C.A. Test – I (Unit 1 & 2)						
Aug 4 - 6, 2026 (Day Order 4 - 6)	3	Connectedness and Completeness on Metric Spaces 3.2 Bounded Sets and Totally Bounded Sets	K1-K5	2	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Aug 7 – 14, 2026 (Day Order 1- 6)	3	Connectedness and Completeness on Metric Spaces 3.2 Bounded Sets and Totally Bounded Sets (continuation)	K1-K5	5	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Aug 17 - 24, 2026 (Day Order 1- 6)	3	Connectedness and Completeness on Metric Spaces 3.3 Complete Metric Spaces Compactness on Metric	K1-K5	5	CO1-5	Lecture, Lecture, Interactive Teaching & Problem Solving	Questioning & Slip Test

	4	Spaces 4.1 Compact Metric Spaces					
Aug 25 – Sep 2, 2026 (Day Order 1- 6)	4	Compactness on Metric Spaces 4.2 Continuous Functions on a Compact Metric Space	K1-K5	5	CO1-5	Lecture, Interactive Teaching & Problem Solving	Questioning & III Component Test 2 Sections 3.3 & 4.1 [15 marks]
Sep 3 – 11, 2026 (Day Order 1- 6)	4	Compactness on Metric Spaces 4.3 Continuity of an Inverse Function 4.4 Uniform Continuity	K1-K5	5	CO1-5	Lecture, Interactive Teaching & Problem Solving	Questioning
Sep 15-17, 2026 (Day Order 1 - 3)	5	Riemann Integration 5.1 Definition of the Riemann Integral 5.2 Properties of the Riemann Integral	K1-K5	3	CO1-5	Lecture, Interactive Teaching & Problem Solving	Questioning
Sep 18 –23, 2026	C.A. Test – II (Unit 3 & 4)						
Sep 24 - 28, 2026 (Day 4 – 6)	5	Riemann Integration 5.3 Derivatives	K1-K5	2	CO1-5	Lecture, Interactive Teaching & Problem Solving	Questioning
Sep 29 – Oct 7, 2026	5	Riemann Integration	K1-K5	5	CO1-5	Lecture, Interactive	Questioning

(Day Order 1 - 6)		5.4 Rolles' Theorem 5.5 The Law of the Mean				Teaching & Problem Solving	& III component Test – 3 (sections 5.1-5.4) [20 marks]
Oct 8 - 14, 2026 (Day Order 1 - 6)	5	Riemann Integration 5.6 Fundamental Theorem of Calculus	K1-K5	5	CO1-5	Lecture, Interactive Teaching & Problem Solving	Questioning
Oct 15 - 21, 2026 (Day Order 1- 4)	REVISION						