STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN (June - November 2026)

Department : **MATHEMATICS**
Name of the Faculty : **Dr. V. DHANALAKSHMI**
Course Title : **MATHEMATICAL STATISTICS**
Course Code : **25MT/MC/ST35**
Shift : **1**

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	recall the basic concepts of probability distributions, expectations, correlation and regression	K1
CO2	demonstrate a comprehensive understanding of concepts related to random variables, mathematical expectation, probability distributions and relation between two variables	K2
CO3	apply the statistical principles to solve problems involving one and two-dimensional variables	K3
CO4	analyse and interpret various probability distributions, and the relational coefficients	K4
CO5	critically evaluate the appropriateness and effectiveness of statistical models and tools	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 15 – 22, 2026 (Day Order 1- 6)	1	Random Variables 1.1 Cumulative Distribution Function 1.2 Properties of Cumulative Distribution Function	K1-K5	5	CO1-5	Lecture	Slip Test
Jun 23 – July 1,	1	Random Variables	K1-K5	5	CO1-5	Examples	Homework

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
2026 (Day Order 1- 6)		1.3 Two-Dimensional Random Variables 1.4 Marginal and Conditional Probability Distribution					
July 2 – July 8, 2026 (Day Order 1- 6)	1&2	Random Variables 1.4 Marginal and Conditional Probability Distribution – Problems Mathematical Expectation 2.1 Mean and Variance and their Properties	K1-K5	5	CO1-5	Group Discussions	Peer evaluation
July 9 – 16, 2026 (Day Order 1- 6)	2	Mathematical Expectation 2.2 Expected Value of a Function of one and two Dimensional Random Variable 2.3 Covariance of X, Y 2.4 Conditional Expected Values	K1-K5	5	CO1-5	Lecture	Problem Assignment from Unit 1 (20 marks)
July 17 – 24, 2026 (Day Order 1- 6)	2	Mathematical Expectation 2.5 Moment and Cumulant Generating Function 2.6 Characteristic Function 2.7 Tchebycheff Inequality	K1-K5	5	CO1-5	Problem Solving	Quiz
July 25 – 28, 2026 (Day Order 1- 3)	3	Special Discrete Probability Distributions 3.1 Binomial Distribution: Characteristic Function, Mean, Mode and Variance, Recurrence Formula	K1-K5	2	CO1-5	Lecture	Problem Test
July 29 – Aug 3, 2026	**C.A. Test - I** (Units 1 & 2)						
Aug 4 - 6, 2026 (Day Order 4 - 6)	3	Special Discrete Probability Distributions 3.2 Poisson Distribution: Moment Generating Function, Central Moments,	K1-K5	3	CO1-5	Lecture	Peer Evaluation

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
		Recurrence Formula, Mode and Additive property					
Aug 7 – 14, 2026 (Day Order 1- 6)	3	Special Discrete Probability Distributions 3.2 Poisson Distribution: Moment Generating Function, Central Moments, Recurrence Formula, Mode and Additive property	K1-K5	5	CO1-5	Lecture	Quiz
Aug 17 - 24, 2026 (Day Order 1- 6)	3&4	Special Discrete Probability Distributions 3.3 Poisson Distribution as a Limiting Form of Binomial Distribution Normal Distribution 4.1 Normal distribution: Mean, Variance, Median, Mode, Central Moments, Mean Deviation about the Mean	K1-K5	5	CO1-5	Group Discussions	Problem Test
Aug 25 – Sep 2, 2026 (Day Order 1- 6)	4	Normal Distribution 4.1 Normal distribution:Quartile Deviation, Moment Generating Functions, Additive Property 4.2 Normal Probability Curve and its Characteristics	K1-K5	5	CO1-5	Problem Solving	Problem Assignment fron Unit 3 (20 marks)
Sep 3 – 11, 2026 (Day Order 1- 6)	4&5	Normal Distribution 4.3 Normal Distribution as a Limiting Form of Binomial Distribution Tests of Significance 5.1 Sampling Theory	K1-K5	5	CO1-5	Lecture	Presentation
Sep 15-17, 2026 (Day Order 1 - 3)	5	Tests of Significance 5.1 Sampling Theory 5.2 Testing of Hypothesis	K1-K5	2	CO1-5	Problem Solving	Slip Test

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Sep 18 –23, 2026	**C.A. Test - II** (Units 3 & 4)						
Sep 24 - 28, 2026 (Day 4 – 6)	5	Tests of Significance 5.3 Test of Significance of Attributes	K1-K5	3	CO1-5	Lecture	Questioning
Sep 29 – Oct 7, 2026 (Day Order 1 - 6)	5	Tests of Significance 5.4 Tests of Significance for Large Sample	K1-K5	5	CO1-5	Group Discussions	Quiz from Units 4 and 5.1, 5.2 (10 marks)
Oct 8 - 14, 2026 (Day Order 1 - 6)	5	Tests of Significance Problems	K1-K5	5	CO1-5	Lecture	Questioning
Oct 15 - 17, 2026 (Day Order 1- 3)	**REVISION**						