

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

Department : **Mathematics**
Name/s of the Faculty : **Dr. A. S. Shanthi & Ms. Nancy Arokia Rani S & Dr. Arputha Christy K, Dr. Chinthamani(Practical)**
Course Title : **MATHEMATICS THROUGH SCIENTIFIC SOFTWARE**
Course Code : **23ID/IC/MS55**
Shift : **I**

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	understand the basics of spreadsheet and Python	K1
CO2	acquire the knowledge of various built in library functions for expressing and solving mathematical problems in Excel and Python	K2
CO3	apply the software tools for implementing Mathematical concepts and obtain solutions	K3
CO4	evaluate different types of formulas and functions available in Excel and Python to determine the best one for a given set of data.	K4
CO5	build user-defined functions for simple applications using Python and Excel	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 15 – 22, 2026 (Day Order 1- 6)	1 & 3	1.1 Introduction to Excel : Navigation and Selecting -View Options - Data Entry, Data Types, Editing and Deleting - Fill Handle 3.1 Variables, Reserved words, Comments, Formatting Text and Numbers	K1-K5	6	1-5	Learning by Doing/ Demo	Practical Exercises
Jun 23 – July 1, 2026 (Day Order 1- 6)	1 & 3	1.2 Formulas - Functions : Autosum, Sum, Average, Max, Min, Count, CountIF, SumIF, AverageIF 1.3 Creating Named Ranges and Constants - Absolute and Cross Reference 3.2 User Defined Functions	K1-K5	6	1-5	Lecture/ Learning by Doing/ Demo	Quiz and Practical Exercises
July 2 – July 8, 2026 (Day Order 1- 6)	1 & 3	1.4 Formatting - Borders - Alignment tools – Number Formats -	K1-K5	6	1-5	Lecture/ Learning by Doing/ Demo	Practical Exercises and

		Format Painter - Styles and Themes 3.3 Looping and Branching 3.4 Importing Standard Mathematical Functions					Discussions
July 9 – 16, 2026 (Day Order 1- 6)	1 &3	1.5 Managing Rows & Columns - Find & Replace 1.6 Filtering -Sorting - Conditional Formatting - Data Validation 3.5 Basic Mathematical Operations, Different Kinds of Numbers, Working with Fractions, Complex Numbers	K1-K5	6	1-5	Quiz/ Learning by Doing/ Demo	Quiz
July 17 – 24, 2026 (Day Order 1- 6)	2 & 3	Advance Excel Options 2.1 Importing Data - Data Cleaning 2.2 Database functions : dsum, daverage, dmax, dmin, dcount 3.6 Getting User Input,	K1-K5	6	1-5	Presentation/ Learning by Doing	Component 1: (15 marks) Scenario-based questions on features and

		Fractions and Complex Numbers as Input					functionalities applied for day-to-day tasks using MS-Excel
July 25 – 28, 2026 (Day Order 1- 3)	2	Cont 2.2 VLOOKUP, HLOOKUP	K1-K5	2	1-5	Lecture/ Learning by Doing/ Demo	Practical Exercises and Discussions
July 29 – Aug 3, 2026	C.A. Test – I (Unit 1, 2.1, 2.2, 3.1-3.5)						
Aug 4 - 6, 2026 (Day Order 4 - 6)	2 & 3	2.3 Printing : Preview, Orientation, Margin and Scale, Page Break, Print Titles, Header and Footer 3.6 Getting User Input, Fractions and Complex Numbers as Input	K1-K5	4	1-5	Presentation/ Learning by Doing	Practical Task-Based
Aug 7 – 14, 2026 (Day Order 1- 6)	2 & 4	2.4 Charts: Chart Types, Move and Resize Chart, Changing Chart Styles and Chart Elements 4.1 Creating Vectors, Lists, Arrays, Scalars and Matrices	K1-K5	6	1-5	Presentation/ Learning by Doing	Practical Exercises and Discussions

		4.2 Arithmetic Operations on Matrices, Eigen Values & Eigen Vectors					
Aug 17 - 24, 2026 (Day Order 1- 6)	2 &4	2.5 Pivot Table - Freeze Panels 2.6 Form Controls 4.3 Solving System of Equations	K1-K5	6	1-5	Presentation / Learning by Doing/ Demo	Practical Exercises
Aug 25 – Sep 2, 2026 (Day Order 1- 6)	2 & 4	2.7 Macros - Solver - Goal Seek 4.4 Working with Expressions, Factorizing and Expanding Expressions, Substituting in Values	K1-K5	6	1-5	Presentation / Learning by Doing/ Demo	Practical Exercises
Sep 3 – 11, 2026 (Day Order 1- 6)	4 & 5	4.5 Converting Strings to Mathematical Expressions 5.2 Visualizing Data with Graphs	K1-K5	6	1-5	Presentation / Learning by Doing/ Demo	Practical Exercises and Discussions
Sep 15-17, 2026 (Day Order 1 - 3)	4 & 5	4.6 Solving Quadratic Equations, Solving for	K1-K5	2	1-5	Presentation / Learning by Doing/	Discussions

		One Variable in Terms of Others, Solving a System of Linear Equations. Cont 5.2 - Understanding the Cartesian Coordinate Plane				Demo	
Sep 18 –23, 2026	C.A. Test – II (unit 2.3 – 2.7, 4.1-4.6, 5.2)						
Sep 24 - 28, 2026 (Day 4 – 6)	4 & 5	4.7 Plotting Expressions Input by the User, Plotting Multiple Functions Cont 5.2 - Creating Graphs with Matplotlib, Customizing Graph	K1-K5	4	1-5	Learning by Doing/ Demo	Component 2: (10 marks) Test on creating various types of data visualization using python
Sep 29 – Oct 7, 2026 (Day Order 1 - 6)	5	5.1 Analyzing Data: Mean, Median, Mode, Frequency Table, Measuring the Dispersion, Variance, Standard Deviation,	K1-K5	6	1-5	Learning by Doing/ Demo	Component 3: (25 marks) Test on Analyzing

		Correlation, Scatter Plot 5.3 Reading Data: Reading Data from a Text File					statistical data Practical Task-Based
Oct 8 - 14, 2026 (Day Order 1 - 6)	5	5.1 Analyzing Data: Mean, Median, Mode, Frequency Table, Measuring the Dispersion, Variance, Standard Deviation, Correlation, Scatter Plot Cont 5.3 Reading Data from a CSV file, Creating a Grouped Frequency Table from a Data File	K1-K5	6	1-5	Learning by Doing/ Demo	Practical Task-Based
Oct 15 - 21, 2026 (Day Order 1- 4)	REVISION						