STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI Course Schedule: June - November 2024

Department	: Mathematics & Computer Science		
Names of the Faculty	: Dr. A. S. Shanthi, Dr. S. Sarah Surya & Ms. Rajalakshmi		
Course Title	: MATHEMATICS THROUGH SCIENTIFIC SOFTWARE		
Course Code	: 19ID/IC/MS55		
Shift	: I		

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation	
Jun 19 –	Unit 1 - 1.1	Lecture,	Curtis, D. Frye. Microsoft Excel 2013, Step by	Practical	
26, 2024	Building Basic	Presentation,	Step. 2013	Exercises	
(Day	Formula	Demo	https://www.tutorialspoint.com/excel/index.htm		
Order 1 - 6) (3 + 3)	Unit 4: Statistical Software: R Data Types in R – Numeric, Integer, Complex, Logical, Character				
Jun 27 –	Working	Lecture,	Sudhamathy, Jothi Venkateswaran. R	Practical	
July 4,	with Charts - Pivot Table	Presentation,	Programming An Approach to Data Analytics.	Exercises	
2024	Unit 4:	Demo	Chennai: MJP Publishers, 2018.		
(Day	Statistical Software: R		https://www.tutorialspoint.com/excel/index.htm		
Order 1	Vectors,				
- 6)	Matrices & Arrays, Lists,				
(3+3)	Data Frames, Factors, Strings				
July 5 –	1.2 -	Lecture,	https://www.tutorialspoint.com/excel/index.htm	Practical	
12, 2024	Importing Data – Data	Presentation,	https://cran.r-project.org/doc/contrib/Paradis-	Exercises	
(Day	Cleaning	Demo	rdebuts_en.pdf		
Order 1	Unit 4:				
- 6)	Statistical				
(3+3)	Software: R Graphics using R – Pie				

10, 2024	C.A. Test – 1 (Unit 1: 1.1 – 1.4 & Unit 4)			
Aug 6 –			C.A. Test – I	
Order 1 - 3) (1 + 2)	Unit 5: Statistical Analysis using R: Normal Distribution and Binomial Distribution			
(Day	and forms	Demo	https://www.tutorialspoint.com/excel/index.htm	
Aug 1 – 5, 2024	1.4 Working with macros	Lecture, Presentation,	Roger D. Peng. R Programming for Data Science. 2015. Lean Publishing	Practical Exercises
July 24 - 31, 2024 (Day Order 1 - 6) (3+3)	Plot 1.3 Form Controls Unit 5: Statistical Analysis using R: Mean, Median, Mode, Standard Deviation & Variation, Quartile Ranges	Lecture, Presentation, Demo	Norman Matloff. The art of R programming, A tour of Statistical Software Design. 2011 https://www.tutorialspoint.com/excel/index.htm	THIRD COMPONENT- 1 Practicals on Excel – 25 marks
July 15 - 23, 2024 (Day Order 1 - 6) (3+3)	Chart, Scatter Plot, Line Plot Data Validation – Creating named ranges and constants Unit 4: Statistical Software: R Graphics using R – Histograms, Box Plot, Bar	Lecture, Presentation, Demo	Curtis, D. Frye. Microsoft Excel 2013, Step by Step. 2013 https://www.tutorialspoint.com/excel/index.htm	Practical Exercises

Aug 12 – 14, 2024	1.5 Solver	Lecture,	Jason van Gumster Robert	Practical
(Day Order 4-6)	Unit 5:	Presentation,	Shimonski, GIMP Bible,	Exercises
(2+2)	Statistical	Demo	Wiley Publishing, 2010.	
	Analysis using R: Correlation		https://docs.gimp.org/2.10/en/	
	Analysis and			
	Regression Analysis			
Aug 16 – 23, 2024	/Goal Seek	Lecture,	Sudhamathy, Jothi	Practical
(Day Order 1-6)	Unit 5:	Presentation,	Venkateswaran. R	Exercises
(3+3)	Statistical	Demo	Programming An Approach	
	Analysis using R: Analysis of		to Data Analytics.	
	Variance		Chennai: MJP Publishers,	
	(ANOVA)		2018.	
			https://docs.gimp.org/2.10/en/	
Aug 27 – Sep 3,	Unit 2.1 - GIMP	Lecture,		Practical
2024	Basics	Presentation,	https://www.tutorial	Exercises
(Day Order 1-6)	Unit 5:	Demo	spoint.com/r/index.htm	
(3+3)	Statistical Analysis using		https://docs.gimp.org/2.10/en/	
	R: Chi Square			
	Test and Hypothesis			
Sec. 4 11 2024	Testing Working with	Lastura	User's Cuide Manual USA.	Dragtical
Sep 4 – 11, 2024	Working with Images	Lecture,	User's Guide Manual, USA:	Practical
(Day Order 1-6) $(2+2)$		Presentation,	Parametric Technology	Exercises
(3+3)	Unit 3: Mathematical	Demo	Corporation, 2007.	
	Software:		https://docs.gimp.org/2.10/en/	
	MATHCAD: Creating Mathcad			
	Worksheets: Working with			
	Math, text			
Sep 12 - 20, 2024	regions Transformations:	Lecture,	Olivier Lecarme, Karine	Practical
(Day Order 1- 6)	Global and Local	Presentation,	Delvare, The Book of GIMP:	Exercises
· · ·	Unit 3:	Demo	A Complete Guide to Nearly	LACICISCS
(3+3)	Mathematical		•	
	Software: MATHCAD:		Everything, No Starch Press, 2013.	
	Computational		https://docs.gimp.org/2.10/en/	
	Features: Calculations –			
	Calculations –			

Sep 23 - 26, 2024 (Day Order 1-4) (3+1)	Operators – Built-in functions – Vectors, Matrices and Data Arrays 2.2 Drawing and Illustration Unit 3: Mathematical Software: MATHCAD: Symbolic Calculations	Lecture, Presentation, Demo	Larsen W Ronald, Introduction to Mathcad 13, New Jersey: Pearson Prentice Hall, 2007 https://docs.gimp.org/2.10/en/	Practical Exercises
Sep 27 – Oct 3,			C.A. Test – II	
2024	(Unit 2: 2.1, 2.2 & Unit 5)			
Oct 4 – 5, 2024	Logos and	Lecture,	Jason van Gumster Robert	THIRD
(Day 5 & 6)	Textures	Presentation,	Shimonski, GIMP Bible,	COMPONENT-
(2)	Unit 3:	Demo	Wiley Publishing, 2010.	2
	Mathematical Software: MATHCAD: Graphing: 2D plots		https://docs.gimp.org/2.10/en/	Project on R- programming – 25 marks
Oct 7 - 15, 2024	Using Animation	Lecture,	Larsen W Ronald,	Practical
(Day Order 1 to 6)	Tools	Presentation,	Introduction to Mathcad 13,	Exercises
(3+3)	Unit 3: Mathematical Software:	Demo	New Jersey: Pearson Prentice Hall, 2007	
	MATHCAD: Graphing: 3D plots		https://docs.gimp.org/2.10/en/	
Oct 16 - 22, 2024	Using GAP	Lecture,	Larsen W Ronald,	Practical
(Day Order 1 to 6)	Unit 3:	Presentation,	Introduction to Mathcad 13,	Exercises
(3+3)	Mathematical Software: MATHCAD: Graphing: 3D plots (contd)	Demo	New Jersey: Pearson Prentice Hall, 2007 https://docs.gimp.org/2.10/en/	
Oct 23 - 24, 2024 (Day Order 1 to 2)			REVISION	