

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

DSCs - FOUR YEAR DEGREE PROGRAMME

Bachelor of Arts (Honours) / Bachelor of Science (Computer Science) (Honours)/

Bachelor of Science (Economics) (Honours)

Session 2026-27

Course Title	Course Code	Course Type	Hours per week	Credit		Marks				Examination Time (in Hours)
			L-T-P	L-T-P	Total	Total	Ext.		CA	
							L	P		
Computer Science (DATA VISUALIZATION)		SEC	2-0-2	2-0-1	3	100	40	30	30	3+3

**Bachelor of Arts (Honours) / Bachelor of Science (Computer Science) (Honours)/
Bachelor of Science (Economics) (Honours) Semester- I**

Session 2026-27

COMPUTER SCIENCE

SKILL ENHANCEMENT COURSE (SEC)

DATA VISUALIZATION

COURSE OUTCOMES:

After passing this course the student will be able to:

CO1: understanding of data visualization and key terms.

CO2: skills on creating visual representation of data.

CO3: develop insights how Tableau is better than excel

CO4: using interactive data visualization

**Bachelor of Arts (Honours) / Bachelor of Science (Computer Science) (Honours)/
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**Session 2026-27
COMPUTER SCIENCE**

SKILL ENHANCEMENT COURSE (SEC)

DATA VISUALIZATION

Examination Time: 3 Hrs.

Max. Marks: 100

Theory: 40

L-T-P: 2-0-1

Practical: 30

Credits: 3

CA: 30

Instructions for Paper Setter -

Eight questions of equal marks (08 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT - I

Introduction: Data Visualization Importance of data visualization, Advantages and Disadvantages of Data Visualization, Applications of data Visualization. Data analysis Definition, data analysis process, sensitivity analysis with data tables in excel, summarizing data with data functions, optimization with excel solver.

UNIT - II

Types of Data Visualization Techniques (Charts, Plots, Maps) Correlation and Regression coefficients, visualization of correlation and regression coefficients. Tools for visualization of Data, Tableau basic overview, tableau installation, tableau data types, working with different Visualization in Tableau.

UNIT - III

Visualizing Data process: acquiring and processing Dataset. Quick Table calculation: Running Total, Moving average, Filtering, Multiple Measures, Boolean and Numerical Formulas. Dashboard Development : Layout , Dashboard Sizzling ,Titles, Formatting. Tableau Public and Desktop: Copy, Export, Print , Print screen .

UNIT - IV

Interactive Data Visualization: Drawing with data , scales , axes, updates. Transition and motion. Common pitfalls of colour use, Visualization along Linear axis , visualization along logarithmic axes.

REFERENCES:

1. Kavitha Ranganathan, Impactful Data Visualization: Hide and Seek with Graphs, Penguin Random House India Private Limited 2023
2. Purna Chander Rao. Kathula, Hands-on Data Analysis & Visualization with Pandas, BPB Publications
3. Claus O. Wilke, Fundamentals of Data Visualization, ORielly, available at <https://clauswilke.com/dataviz/>
4. Jeffrey Ohlmann, Michael Fry, Data Visualization: Exploring And Explaining With Data By Cengage Learning
5. Dunlop, Dorothy D., and Ajit C. Tamhane, “Statistics and data analysis: from elementary to intermediate”, Prentice Hall, 2000.
6. Joseph F Hair, William C Black et. al , Multivariate Data Analysis, Pearson Education, 7th edition, 2013.