

**SES's L.S. RAHEJA COLLEGE OF ARTS AND COMMERCE
(AUTONOMOUS)**



BOARD OF STUDIES: Information Technology and Data Science

Programme: B.Sc. (Artificial Intelligence & Data Science)

Semester: I

Nomenclature of the Course: Spreadsheet Analytics and Visualization Tools

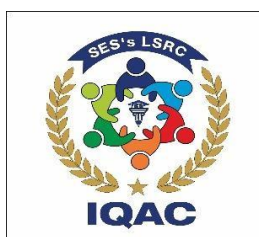
NEP Vertical: SEC

Credit: 02

Total Marks: 50

Academic Year: 2026–27

(As per Choice Based Credit System under NEP 2020)



Unit-wise Detailed Syllabus

Unit	Detailed Contents	Andragogy (Theory + Hands-on)	Hours
I	Fundamentals of Spreadsheet Analytics 1. Introduction to Spreadsheet Software (MS Excel / Google Sheets) 2. Spreadsheet Interface and Components 3. Data Types and Cell Formatting 4. Basic Formulas and Functions (SUM, AVERAGE, COUNT, MIN, MAX) 5. Logical Functions (IF, AND, OR) 6. Lookup Functions (VLOOKUP / HLOOKUP – Basic Concept) 7. Data Sorting and Filtering 8. Data Validation Techniques 9. Introduction to Pivot Tables	Demonstration-based teaching, Real-life datasets (marks sheet, sales data), Hands-on Activities: Creating grade sheets Applying conditional formulas Data sorting & filtering exercises Creating Pivot Table for summary analysis	15
II	Data Visualization and Dashboard Creation 1. Importance of Data Visualization in Data Science 2. Types of Charts – Bar, Line, Pie, Histogram, Scatter Plot 3. Chart Formatting and Customization 4. Conditional Formatting 5. Introduction to Dashboard Concept 6. Combining Charts with Pivot Tables 7. Basic Data Cleaning Techniques 8. Case Study: Sales / Academic Performance Analysis	Concept explanation with visual examples, Case-study driven approach, Hands-on Activities: Creating different chart types Applying conditional formatting rules Building a simple interactive dashboard Visual analysis of dataset	15

Learning Objectives

1. To understand spreadsheet tools for data handling and analysis.
2. To apply formulas and logical functions for data processing.
3. To perform data summarization using Pivot Tables.
4. To create meaningful visualizations and dashboards.
5. To develop data interpretation skills for business and analytics applications.

Course Outcomes (CO)

CO No.	Course Outcome	Bloom's Level	PSO Mapped
CO1	Apply spreadsheet formulas for data analysis	Apply (L3)	PSO2
CO2	Use logical and lookup functions effectively	Apply (L3)	PSO2
CO3	Summarize datasets using Pivot Tables	Apply (L3)	PSO3
CO4	Create and interpret charts and dashboards	Analyze (L4)	PSO3
CO5	Perform basic data cleaning and validation	Apply (L3)	PSO2

Suggested Readings

Sr. No.	Title	Author / Source
1	Microsoft Excel 365 Bible	Michael Alexander & Richard Kusleika
2	Excel Data Analysis for Dummies	Stephen L. Nelson
3	Data Visualization with Excel	Jordan Goldmeier
4	Official Microsoft Excel Documentation	Microsoft Support

QUESTION PAPER PATTERN

(A) FOR CONTINUOUS EVALUATION

Particulars	Marks
Class Test	10
Assignment / Programming Task	10
Total	20

B) FOR SEMESTER END EXAMINATION

Maximum Marks: 30

Duration: 1 Hour

Question No.	Description	Total Marks
Q1	Attempt Unit I	
	A – Remembering	15
	B – Applying	
	C – Analysing	
OR		
	P – Remembering	15
	Q – Applying	
	R – Analysing	
Q2	Attempt Unit II	
	A – Understanding	15
	B – Applying	
	C – Evaluating/Analysing	
OR		
	P – Remembering	15
	Q – Understanding	
	R – Evaluating/Analysing	