



**C P PATEL AND F H SHAH COMMERCE COLLEGE, ANAND
(AUTONOMOUS)**

(Managed by Sardar Patel Education Trust, Anand)
(Affiliated to Sardar Patel University, Vallabh Vidyanagar)
NAAC Reaccredited CGPA – 3.30 – Grade A+



Revised Syllabus as per NEP 2020 with effect from the Academic Year 2026-2027

**Master of Science (Data Science)
Semester – I**

Course Code	PGN1CMDS03	Title of the Course	Data Analysis using Office Tools
Total Credits	04	Hours per Week	04 Hours / Week

Course Learning Outcomes (CLOs)

CLO 1	Students will be able to import, clean, validate, and format spreadsheet data using various Office Tools features for accurate data preparation and analysis.
CLO 2	Students will be able to sort, filter, organize, and summarize datasets using ranges, subtotals, and quick analysis functions to derive meaningful insights from data.
CLO 3	Students will be able to apply advanced spreadsheet functions such as VLOOKUP, HLOOKUP, INDEX-MATCH, and create Pivot Tables and Pivot Charts for efficient data analysis and reporting.
CLO 4	Students will be able to perform advanced data analysis and visualization, including financial analysis, data consolidation, what-if analysis, and statistical functions for informed decision-making.

Course Content

Unit No.	Description	Weightage (%)
1.	Introduction of Spreadsheets Table • Basic Office Spread Sheets, import or export data. • Deleting unnecessary columns and rows (Resize, Duplication etc.) • Cleaning data for analysis (Formatting Data with Text Functions) • Using validation to keep data clean • Cleaning Data Containing Date Values • Conditional Formatting	25%
2.	Sorting, Filtering, Ranges and Quick Function • Sort by Text, Number, Date or Time etc. • Filtering by Text, Date, and Color etc. • Subtotals with specific ranges.	25%



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	Quick analysis with Totals: Sum, Avg, Count, %Total, Sum of Columns.	
3.	Advanced Excel Function, Pivot Tables & Pivot Charts - VLOOKUP Function Introduction - VLOOKUP Function with range_lookup - HLOOKUP Function Introduction - HLOOKUP Function with range_lookup - Index and Match Function - Working with pivot tables and Charts	25%
4.	Advanced Data Analysis - Data Visualization (Bar Chart, Gantt Chart etc.) - Financial Analysis (Calculating Interest Rate, Term of Loan, Decisions on Investments) - Data Consolidation - What-If Analysis (What-If Analysis with Scenario Manager) - Statistics Functions uses (Standard Deviation, Normal Distribution)	25%

Teaching – Learning Methodology

Material for this course will be presented using multiple teaching approach:
Lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations.

Examination Evaluation Pattern

Sr. No.	Particulars	Weightage (%)
01	Continuous and Comprehensive Evaluation (CCE) (Formative Assessment)	50%
02	Semester End Evaluation (SEE) (Summative Assessment)	50%
	TOTAL	100%

Specifications for CCE and SEE

Sr. No.	Details of the Evaluation Pattern	Marks
01	Continuous and Comprehensive Evaluation (CCE) (Formative Assessment)	
	A Assignments	10
	B Multiple Choice Questions	05
	C Attendance	05
	D Written Examination (01 Hour)	30
	(Formative Assessment) (A + B + C + D)	50 Marks
02	Semester End Evaluation (SEE) (Summative Assessment)	
	E Written Examination (02 Hours)	50 Marks
	TOTAL(For 04 Credit Courses)	100 Marks



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Rubrics – Based Assessment for Assignments (10 Marks)

Excellent	09 – 10 Marks	Demonstrates excellent understanding of spreadsheet concepts, accurate use of formulas/functions, effective data cleaning, analysis, visualization, and interpretation of results. Assignment is well-organized and professionally presented.
Good	07 – 08 Marks	Shows good understanding of concepts with minor errors. Appropriate use of spreadsheet functions, charts, and analysis tools. Results are mostly accurate and well-presented.
Average	05 – 06 Marks	Demonstrates basic understanding of concepts. Uses limited functions and analysis techniques with some errors. Presentation and interpretation are satisfactory.
Basic	03 – 04 Marks	Limited understanding of spreadsheet tools and data analysis techniques. Several errors in calculations, charts, or interpretation. Assignment lacks proper organization.
Poor	01 – 02 Marks	Inadequate understanding of concepts. Incorrect application of formulas/functions and poor data analysis. Assignment is incomplete or contains major errors.
Below Poor	Zero Marks / NA	Irrelevant submission, copied work, or assignment not submitted.

Note:

- Assignments may be taken in forms of written project, computerized and online suggested courses / certificates as per the decision made by the respective faculties of the courses.

Rubrics – Based Assessment for Multiple Choice Questions (05 Marks)

05 Multiple Choice Questions – 01 Mark Each (05 Marks)

Excellent	01 Mark	The chosen option is correct, no errors in response
Below Poor	Zero Marks / NA	Chosen option is incorrect, completely irrelevant, multiple options chosen / Not Attempted

Rubrics – Based Assessment for Attendance (05 Marks)

As per the Rules and Regulations provided by the Academic Section of Sardar Patel University, Vallabh Vidyanagar, for the students studying in all departments and colleges.

Reference No.: E – 3 / 3127; dated: 07-03-2024.

<https://www.spuvvn.edu/orbit-cdn/uploads/circulars/Circular-NEP-InternalExamMarks-March-April24.pdf>

Excellent	05 Marks	More than 90% (Minimum 54 Hours for 04 Credits Courses)
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Good	04 Marks	80% - 89% (48 to 53 Hours for 04 Credit Courses)
Average	03 Marks	70% - 79% (42 to 47 Hours for 04 Credit Courses)
Poor	Zero / NA	Less than 70% (Less than 42 Hours) (NOT ELIGIBLE TO APPEAR FOR EXAM)

Note:

- Students with below 70% of attendance must submit their written application to their respective class coordinators with genuine reasons and evidence (in case of working or medical emergencies). Students must **not** pursue dual degree programmes that clash with the college's timings.

Rubrics – Based Assessment for Mid-Semester Examination (30 Marks)

Any Two Unit or 50% of The Syllabus - 15 Marks Each Question

Excellent	13 – 15 Marks	Accurate, complete, and well-presented answer.
Good	10 – 12 Marks	Minor errors and good conceptual clarity.
Average	07 – 09 Marks	Basic understanding and partially correct answer.
Basic	04 – 06 Marks	Limited understanding with noticeable mistakes.
Poor	01 – 03 Marks	Inadequate understanding and incorrect answer.
Below Poor	Zero Marks / NA	Content is irrelevant / Not Attempted / Not Submitted

Note:

- Written Examination questions will be based on various levels of Revised Bloom's Taxonomy.

Rubrics – Based Evaluation Pattern for End-Semester Examination (50 Marks)

06 Multiple Choice Questions – 01 Mark Each (06 Marks)

Excellent	01 Mark	The chosen option is correct, no errors in response
Below Poor	Zero Marks / NA	Chosen option is incorrect, completely irrelevant, multiple options chosen / Not Attempted

Short Question (12 Marks) – 6 Question from all Units

Excellent	02 Marks	Demonstrates accurate understanding of concepts related to questions. Provides correct calculations, appropriate formulas, and clear explanations with complete answers.
Good	01 Mark	Shows partial understanding of concepts with some correct steps or explanations. Minor errors or incomplete answers may be present.
Poor	00 Mark	Incorrect, irrelevant, or no response provided.

UNIT I - 08 Marks Each Question

Excellent	06 – 08 Marks	Accurate explanation of spreadsheet concepts, data import, cleaning, validation, and formatting
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Good	04 – 06 Marks	Good understanding with minor errors in data preparation techniques
Average	03 – 04 Marks	Basic understanding of spreadsheet operations with some mistakes
Basic	02 – 03 Marks	Partial understanding of data cleaning and formatting concepts
Poor	01 – 02 Marks	Inadequate understanding and incorrect application
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer
UNIT II - 08 Marks Each Question		
Excellent	06 – 08 Marks	Accurate use of sorting, filtering, ranges, and quick analysis functions
Good	04 – 06 Marks	Minor errors in sorting, filtering, or subtotal operations
Average	03 – 04 Marks	Basic understanding with partially correct procedures.
Basic	02 – 03 Marks	Limited understanding of data organization techniques
Poor	01 – 02 Marks	Incorrect application of sorting and filtering concepts
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer
UNIT III - 08 Marks Each Question		
Excellent	06 – 08 Marks	Correct use of VLOOKUP, HLOOKUP, INDEX-MATCH, Pivot Tables, and Charts
Good	04 – 06 Marks	Minor errors in advanced functions or pivot analysis
Average	03 – 04 Marks	Basic understanding with partially correct implementation
Basic	02 – 03 Marks	Limited understanding of advanced functions and pivots
Poor	01 – 02 Marks	Incorrect use of functions and analysis tools
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer
UNIT IV - 08 Marks Each Question		
Excellent	06 – 08 Marks	Accurate application of data visualization, financial, statistical, and what-if analysis
Good	04 – 06 Marks	Minor errors in analysis and interpretation
Average	03 – 04 Marks	Basic understanding with partially correct analysis



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Basic	02 – 03 Marks	Limited understanding of advanced analysis techniques
Poor	01 – 02 Marks	Inadequate analysis and incorrect interpretation
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer

Note:

- Multiple Choice Questions of 10 Marks will be based on various levels of Revised Bloom's Taxonomy.
- Written Examination questions will be based on various levels of Revised Bloom's Taxonomy.

PLO – CLO Mapping								
Data Analysis using Office Tools								
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
CLO 1	3	2	2	1	0	0	0	0
CLO 2	3	3	2	2	0	0	0	1
CLO 3	2	3	3	2	1	0	0	1
CLO 4	2	3	3	3	2	1	1	2

Note:
High: **03**; Moderate: **02**; Low: **01**; No Mapping: **00**

Suggested References and E-Resources for Further Reading	
Excel Data Analysis For Dummies, 2nd Edition Published by: John Wiley & Sons, Inc	
Data Analysis with Excel 2016 by Tutorials Point (I) Pvt. Ltd	
Advanced Data Analysis: From Excel PivotTables to Microsoft Christopher C. Brown Denise Pan Gabrielle Wiersma	
https://www.tutorialspoint.com/advanced_excel/advanced_excel_instant_data_analysis.htm	
https://support.microsoft.com/en-us/office/analyze-data-in-excel-3223aab8-f543-4fda-85ed76bb0295ffc4	
