Ganpat University
॥ विद्यया समाजोत्कर्षः ॥

Faculty of Computer Applications

Program	BCA Honors (Artificial Intelligence & Machine Learning)	**Branch/Spec.**	Computer Applications
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2026-2027	**Effective for the batch Admitted in**	June 2026
Subject Code	U91C4DA	**Subject Name**	DATA ANALYTICS

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture (DT)**		**Practical (Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	2		2	-	4	Theory	50	50	100
Hours	2		4	-	6	Practical	-	-	-

Objective:

Students in Excel-based data analytics will aim to understand Excel for analytics, master formulas and functions (especially Named Ranges), develop proficiency with Excel Lists, acquire logical functions for decision-making, and master lookup functions and PivotTables for efficient data analysis.

Pre-requisites:

Students need to know about basic familiarity with Microsoft Excel.

Course Outcomes:

Name of CO	Description
CO1	Students will gain a strong understanding and utilize Excel for data analytics tasks.
CO2	Students will Understand Formulas and Functions and Named Ranges Utilization
CO3	Students will acquire skills for Working with Excel Lists
CO4	Students will understand to utilize Logical Functions and Decision Making
CO5	Students will understand to utilize lookup functions and concept and application of PivotTables

Mapping of CO and PO

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1	1	1	3	1	1	1	1
CO2	1	1	1	2	1	1	1	1
CO3	1	1	1	2	1	1	1	1
CO4	1	1	1	2	1	1	1	1
CO5	1	2	1	3	1	1	1	1

Content:		
Unit		**Hrs**
1	**Getting Started with Excel** The Start Screen, Exploring the Interface, Understanding Ribbons, Tabs and Menus, Customizing the Quick Access Toolbar, Useful Keyboard Shortcuts **Creating excel spreadsheet** Working with Excel Templates, working with Workbooks and Worksheets, Saving Workbooks and Worksheets, Entering and Editing Data, Navigating and Selecting Cells, Rows and Columns **Formatting Worksheet** Working with Rows and Columns, Deleting and Clearing Cells, Aligning Text and Numbers, Applying Themes and Styles	6
2	**Introduction to excel formulas and functions** Formulas and Functions Explained, Performing Calculations with the SUM Function, Counting Values and Blanks, Finding the Average with the AVERAGE Function, Working with the MIN and MAX Functions, Handling Errors in Formulas, Auto sum and AutoFill, Flash Fill **Using Named Ranges** What are Named Ranges? Creating Named Ranges, Using Named Ranges in Calculations **Formatting Number and cells** Applying Number Formats, Applying Date and Time Formats, Formatting Cells, Rows and Columns, Using Format Painter	6
3	**Working with Excel Lists** How to Structure a List? Sorting a List (Single-Level Sort), Sorting a List (Multi-Level Sort), Sorting Using a Custom List (Custom Sort), Using Auto filter to Filter a List, Format as a Table, Creating Subtotals in a List	6
4	**Making Decisions with logical functions** Logical Functions (AND, OR, IF), The IF Function, Nested Ifs, The IFS Function, Conditional IFs (SUMIF, COUNTIF, AVERAGEIF), Multiple Criteria (SUMIFS, COUNTIFS, AVERAGEIFS)	6
5	**Looking up Information** Looking Up Information using VLOOKUP, Looking Up Information Horizontally using HLOOKUP, Performing Flexible Lookups with INDEX and MATCH, Using XLOOKUP and XMATCH, The OFFSET Function, The INDIRECT Function **PivotTables** PivotTables Explained, creating a PivotTable from Scratch, Pivoting the PivotTable Fields, Applying Subtotals and Grand Totals, Applying Number Formatting to PivotTable Data, Grouping PivotTable Data, Formatting Error Values and Empty Cells, Applying PivotTable Styles	6

Practical Content:	
✓ List of programs specified by the subject teacher based on above mentioned topics	
Text Books:	
1	Data Analytics with Excel: A Complete Guide, John David Ariansen, O'Reilly Media
Reference Books:	
1	Data Analytics with Microsoft Excel, Berk & Carey, Brooks/Cole Cengage Learning
2	Data Analysis with excel, Manisha Nigam, BPB Publications

Web References / MOOC / Certification Course	
1	https://www.udemy.com
2	https://www.coursera.org
3	https://www.tutorialspoint.com
4	https://www.udemy.com/course/the-ultimate-microsoft-excel-online-course/
5	https://www.coursera.org/professional-certificates/ibm-data-analyst-r-excel
6	https://www.coursera.org/courses?query=data%20analysis%20excel
7	https://www.udemy.com/topic/excel-analytics/
8	https://www.datacamp.com/courses/data-analysis-in-excel
9	https://www.udemy.com/course/data-analytics-in-excel/

Question Paper Scheme:

End Semester Examination Duration: (2 Hours Theory Examination)
Note for Examiner: -
Q-1 Any Five out of Seven (25 Marks)
Q-2 Any Two out of Three (06 Marks)
Q-3 Mandatory question (05 Marks)
Q-4 Any Two out of Three (08 Marks)
Q-5 Any Two out of Three (06 Marks)

Paper Structure:

1. The question paper must comprehensively address all Course Outcomes (COs), align Taxonomy levels, and ensure complete syllabus coverage.
2. Must be from topics: Working with Excel Lists (05 marks) CO2
3. Must be from topics: Making Decisions with logical functions (05 marks) CO3
4. Must be from topics: Looking up Information (05 marks) CO4
5. Must be from topics: Looking up Information, PivotTables (05 marks) CO5