



# GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Bachelor of Computer Applications

Level: Under Graduate

Course / Subject Code : BC02001061

Course / Subject Name : Data Analytics using Spread Sheet

w. e. f. Academic Year:	2024-25
Semester:	2
Category of the Course:	Skill Enhancement Courses

<b>Prerequisite:</b>	Basic Excel Skill
<b>Rationale:</b>	Data analytics using spreadsheet lies in its accessibility, versatility, and cost-effectiveness, enabling users to conduct data analytics tasks efficiently and effectively across industries and applications.

## Course Outcome:

After completion of the course, student will able to:

No.	Course Outcomes	RBT Level*
1	Perform data organization techniques and navigate the excel interface for entering and copying formulas.	AP
2	Use basic excel functions such as count, sum, date time functions, text functions, and advanced Excel functions such as various LOOKUP functionality.	AP
3	Apply fundamental mathematical, statistical and financial functions on data.	AP
4	Create and interpret data visualizations for various charts using chart wizard and pivot tables.	AP
5	Automate complex tasks by creating and executing macros and design custom functions in VBA.	AP

## Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial / Practical		
				ESE (E)	PA / CA (M)	PA/CA (I)	ESE (V)	
0	0	4	2	0	0	50	50	100

## Course Content:

Unit No.	Content	No. of Hours	Weightage (%)
1	Introduction to Data Analysis & Creating Formulas:	07	15%



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	Sorting, Filter, Text to Column, Data Validation, Splitting the Screen, Freezing Panes, Entering and copying formula, use of arithmetic: Ratios & Proportions, algebraic, trigonometric and statistical functions in excel, use of different forms IF condition, NESTED IF condition etc., What-if- Analysis, Goal Seek.		
2	<b>Working with Functions in MS-Excel-1:</b> <b>Count and Sum:</b> Countif, Count Blank/Nonblank Cells, Count Characters, Not Equal To, Count Cells with Text, Sum, Running Total, Sumif, <b>Date &amp; Time:</b> DateDif, Today's Date, Date and Time Formats, Calculate Age, Time Difference, Weekdays, Days until Birthday, Add or Subtract Time, Day of the Year. <b>Text:</b> Separate Strings, Count Words, Text to Columns, Find, Change Case, Remove Spaces, Compare Text, Substitute vs Replace, Concatenate, Substring. <b>Lookup &amp; Reference:</b> Vlookup, Index and Match, Two-way Lookup, Offset, Case-sensitive Lookup, Left Lookup, Locate Maximum Value. Indirect, Two column Lookup, Closest Match.	11	25%
3	<b>Working with Functions in MS-Excel-2:</b> <b>Financial Functions:</b> Future Value (FV), FVSCCHEDULE, Present Value (PV), Net Present, Value (NPV), PMT, Internal Rate of Return (IRR), NPER, EFFECT. <b>Mathematical Functions:</b> ROUND, COUNT, COUNIF, MIN, MAX, ROUND, SQRT. <b>Statistical Functions:</b> AVERAGE, MEAN, MEDIAN, MOD, STDEV, VAR, RSQ, DEVSQ, COVAR.	11	25%
4	<b>Data Visualization:</b> Using Chart wizard: Creating various types - pie, column, bar, area etc., Generating Histogram, Frequency Curve and Polygon, Time series graphs, Inserting bit map objects, word Art. Pivot Table: Creating pivot-table, creating pivot charts, inserting pictures, clipart shapes, and smart arts.	09	20%
5	<b>Macro and VBA in MS-Excel:</b> Use a macro, record a macro, assign a macro, run a macro, store a macro, use relative references, Create a basic calculator with VBA in Excel. Write some code in VBA (Visual Basic for Application) to manipulate records in Excel spreadsheet and work with VBA user form to build graphic user interface application.	07	15%
	<b>Total Hours:</b>	<b>45</b>	<b>100%</b>



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## Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
20%	30%	50%	-	-	-

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

## References/Suggested Learning Resources:

### (a) Textbook:

1. Walkenbach J., "Microsoft Excel 2016 Bible: The Comprehensive Tutorial Resource", Wiley.

### Reference Books:

1. Mark Doge and Craig Stinson, "Microsoft Excel Latest Version Inside Out", PHI Learning Private Limited, New Delhi – 110001.
2. Winston, "Microsoft Excel 2013: Data Analysis and Business Modeling", PHI
3. Bernd Held, "Excel Functions and Formulas", BPB Publications.

## CO- PO Mapping:

Semester 2	Course Name : Data Analytics using Spread Sheet										
	POs										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11
CO1	3	3	3	-	3	-	-	-	2	-	2
CO2	3	3	3	-	3	-	-	-	2	-	2
CO3	3	3	3	-	3	-	-	-	2	-	2
CO4	3	3	3	-	3	-	-	-	2	-	2
CO5	3	3	3	-	3	-	-	-	2	-	2

Legend: '3' for high, '2' for medium, '1' for low and '-' for no correlation of each CO with PO.

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