Program: B.Com Economics and Analytics				Semester: I	
Course: Introduction to Excel for Analytics AY: 2024-25				Course Code:	
Teaching Scheme				**Evaluation Scheme**	
Lecture (Hours per week)	**Practical (Hours per week)**	**Tutorial (Hours per week)**	**Credit**	**Continuous Assessment (CA)** **(Marks -)**	**Semester End Examinations (SEE)** **(Marks - in Question Paper)**
3 LABS	**-**	**-**	**3**		

Learning Objectives:

1. Understand the principles of data analytics and fundamental Excel operations for essential data manipulation
2. Explore foundational mathematical and statistical analysis techniques in Excel for informed decision making
3. Familiarize with Excel for comprehensive data visualization and modeling for insight generation
4. Comprehend macros and automation for efficient automation of data analytics processes

Course Outcomes:

After completion of the course, learners would be able to:

CO1: Apply Excel functions and data manipulation techniques to transform raw datasets and prepare them for better analysis

CO2: Employ Excel tools to conduct statistical analysis to gain hands on learning in descriptive statistics, probability distributions, and hypothesis testing

CO3: Construct insightful data visualizations and design data models

CO4: Develop macros for automating repetitive data analytics jobs

Pedagogy:

Hands-on practical, Computer laboratory-based learning

Outline of Syllabus: (per session plan)

Module	Description	No of Hours
1	Foundations of Data Analytics with Excel	10
2	Advanced Functions and Statistical Analysis	13
3	Data Visualization and Modelling	14
4	Optimization and Automation	8
Total		**45**
Practicals		**-**

Unit	Topic	No. of Hours
Module 1	**Foundations of Analytics and Excel** Introduction to Analytics and Excel – Overview of Analytics and its Role in Decision Making, Navigating Excel's Interface, Data Entry and Formatting, Understanding Cell References, Data Population Techniques Data Analysis and Basic Formulas - Sorting, Filtering, Data Alerts and Conditional Formatting, Fundamental Functions and Formulas (Basic)Named Ranges, Data Protection Basic Data Cleaning and Collaboration - Handling Missing Data, Duplicates, Text Manipulation, and Data Transformation, Data Validation and Error Handling, Consolidation, and Collaboration	10
Module 2	**Advanced Functions and Statistical Analysis** Advanced Functions - Text Functions, Logical Functions, Date and Time Functions, LOOKUP and MATCH Functions, Mathematical Functions, Nested Functions, Financial Functions Descriptive Statistics and Analysis – Introduction to Measures of Central Tendency, Measures of Dispersion, Correlation, Covariance, Statistical Functions, and Basic Statistical Analysis with Excel's Data Analysis ToolPak	13
Module 3	**Data Visualization and Modelling** Data Visualization – Creating Charts, Graphs, Pie Charts, Spark Lines, Data Bars, Slicers, and Other Visuals to Create Representation of Data, Advanced Charting Techniques using Excel Data Modelling – Importing and Exporting Data from Diverse Sources, What-If Analysis, Scenario Manager, and Goal Seek, Working with Data Tables and Performing Sensitivity Analysis, Understanding Pivot Tables and Pivot for Data Summarization and Visualization	14
Module 4	**Optimization and Automation** Optimization with Excel Solver – Understanding Excel's Solver as an Optimization Tool, Formulating Optimization Problems, Configuring Solver Parameters, Challenges and Limitations of Solver in Analytics Macros for Automation - Introduction to Macros, Recording and Running Macros in Excel, Editing Recorded Macros and Debugging, Performing Repetitive Tasks	8

	like Data Cleaning, Manipulation and Formatting with Excel Macros, Creating and Integrating Custom Functions to Perform Analytical Operations	

Reference Books:

[1] Michael Alexander and Dick Kulseika, “Microsoft Excel 365 Bible – The Comprehensive Tutorial Resource”, Wiley, February 2022

[2] Greg Harvey, "Excel 2019 for Dummies", Wiley, October 2018

[3] Greg Harvey, "Excel 2019 All-in-One Desk Reference for Dummies", October 2018

[4] Joseph Schmuller, “Statistical Analysis with Excel for Dummies”, Wiley, December 2021

[5] Alan Murray, “Advanced Excel Formulas”, Apress, August 2022

[6] Paul McFedries, “Excel Data Analysis for Dummies”, Wiley, January 2022

[7] Wayne Winston, "Microsoft Excel Data Analysis and Business Modeling – Office 2021 and Microsoft 365", Microsoft Press, December 2021

[8] Bill Jelen and Tracy Syrstad, "Microsoft Excel VBA and Macros – Office 2021 and Microsoft 365", Microsoft Press, March 2022