

School of Computer Science and Applications

Value-Added Certificate Course Proposal

Course Title: Microsoft Excel – From Basic to Advanced Applications

Duration: Minimum 30 Sessions × 60 Minutes each

Mode of Delivery: Theory and Hands-on Practical

Maximum Intake: 30 Students

Course Coordinator:

| | |
|--------------------|--|
| Name | Mrs Vaishali Patil |
| Designation | Asst. Professor |
| Email | vkpatil@sibeindia.edu.in |
| Contact | 7588699301 |

| | |
|--------------------|--|
| Name | Dr. Mrudula Patkar |
| Designation | Asst. Professor |
| Email | mrudulapatkar@siberindia.edu.in |
| Contact | 9850298504 |

1. Course Overview:

This course, “Microsoft Excel – From Basic to Advanced Applications” is designed to equip learners with essential data management and analytical skills required in today’s job market. Excel proficiency is one of the most in-demand technical skills across industries such as business, finance, education, and data analysis. The course builds from fundamental concepts like data entry, formatting, and formulas to advanced tools such as Lookup references, PivotTables, Power Query. It enhances both analytical thinking and problem-solving abilities while improving efficiency and accuracy in handling data. By completing this course, learners will gain valuable employability skills, technical expertise, and the confidence to manage and analyze real-world data effectively.

2. Objectives:

- To build strong foundational and advanced Excel skills for data management and analysis.
- To enhance data visualization, reporting, and decision-making skills.
- To prepare students for professional applications of Excel in research, business, and management.

3. Course Outcomes (COs):

- Learners will identify and explain the core features and functions of Microsoft Excel to demonstrate a clear understanding of spreadsheet operations.
- Learners will apply formulas, functions, and data management techniques to organize and process information effectively.
- Learners will analyze and interpret datasets to evaluate data patterns and trends for informed decision-making.
- Learners will design and create interactive dashboards and automated workflows using advanced Excel tools.

4. Course Modules / Structure:

| |
|--|
| Module 1: Introduction to Excel Environment |
|--|

| | |
|--|--|
| | |
| 1.1 | Overview of Excel interface and navigation |
| 1.2 | Workbook, worksheet, cells, and ranges |
| 1.3 | Data entry and editing techniques |
| 1.4 | Customizing ribbons, toolbars, and settings |
| | |
| Module 2: Basic Excel Operations | |
| | |
| 2.1 | Formatting cells (number, date, text, conditional formatting) |
| 2.2 | Adjusting column widths and row heights |
| 2.3 | Copying, moving, and deleting data |
| 2.4 | Basic printing and page setup options |
| | |
| Module 3: Working with Formulas and Functions | |
| | |
| 3.1 | Formula basics and cell referencing (relative, absolute, mixed) |
| 3.2 | Common functions: SUM, AVERAGE, MIN, MAX, COUNT |
| 3.3 | Text functions: LEFT, RIGHT, MID, CONCATENATE, TEXTJOIN |
| 3.4 | Logical functions: IF, AND, OR, NOT |
| | |
| Module 4: Data Handling and Management | |
| | |
| 4.1 | Sorting and filtering data |
| 4.2 | Data validation (drop-down lists, custom rules) |
| 4.3 | Removing duplicates |
| 4.4 | Find and Replace, Go To Special |
| | |
| Module 5: Advanced Functions for Analysis | |
| | |
| 5.1 | Lookup functions: VLOOKUP, HLOOKUP, XLOOKUP, INDEX & MATCH |
| 5.2 | Date & time functions: TODAY, NOW, DATEDIF, NETWORKDAYS |
| 5.3 | Financial functions: PMT, FV, NPV, IRR |
| 5.4 | Statistical functions: AVERAGEIF(S), COUNTIF(S), SUMIF(S) |
| | |
| Module 6: Data Visualization – Charts and Graphs | |
| | |
| 6.1 | Creating and customizing charts (bar, line, pie, scatter, combo) |
| 6.2 | Using sparklines and conditional formatting for visual analysis |
| 6.3 | Best practices in chart design for presentations and reports |
| | |
| Module 7: Working with Tables and Structured Data | |
| | |
| 7.1 | Creating and formatting Excel Tables |
| 7.2 | Structured references |
| 7.3 | Table formulas and slicers |

| | |
|---|--|
| | |
| Module 8: Pivot Tables and Pivot Charts | |
| | |
| 8.1 | Creating and customizing PivotTables |
| 8.2 | Grouping and summarizing data |
| 8.3 | Using calculated fields and items |
| 8.4 | Designing PivotCharts for interactive reporting |
| | |
| Module 9: Data Cleaning and Preparation | |
| | |
| 9.1 | Handling missing or inconsistent data |
| 9.2 | Text-to-columns and Flash Fill |
| 9.3 | TRIM, CLEAN, SUBSTITUTE functions |
| 9.4 | Combining datasets for analysis |
| | |
| Module 10: Excel for Data Analysis (Applied Skills) | |
| | |
| 10.1 | Descriptive statistics using Excel |
| 10.2 | Correlation and regression analysis |
| 10.3 | What-If analysis: Goal Seek, Scenario Manager, Data Tables |
| 10.4 | Using Solver for optimization problems |
| | |
| Module 11: Advanced Excel Tools | |
| | |
| 11.1 | Named ranges and dynamic ranges |
| 11.3 | Hyperlinks and comments |
| 11.4 | Consolidating data from multiple sheets |
| | |
| Module 12: Dashboard Design and Reporting | |
| | |
| 12.1 | Dashboard principles and layout design |
| 12.2 | Using form controls (drop-downs, checkboxes) |
| 12.3 | Integrating charts, PivotTables |
| 12.4 | Automating dashboards with formulas and interactivity |
| | |
| Module 13: Excel Integration with Other Applications | |
| | |
| 13.1 | Importing/exporting data (CSV, Access, Google Sheets) |
| 13.2 | Linking Excel with Word and PowerPoint |
| 13.3 | Introduction to Power Query for data transformation |
| | |
| Module 14: Introduction to Macros and VBA | |
| | |
| 14.1 | Recording and editing macros |
| 14.2 | Understanding VBA editor and basic syntax |

| | |
|---|--|
| 14.3 | Writing simple VBA scripts for automation |
| Module 15: Case Studies and Practical Applications | |
| 15.1 | Excel for social work data management and surveys |
| 15.2 | Excel for business analytics and financial modeling |
| 15.3 | Group project: Develop an interactive dashboard/report |

5. Pedagogy / Teaching Methods:

3. Lectures

4. Lab sessions

5. Case studies

6. Assessment & Evaluation Scheme:

| Component | Description | Weightage |
|---------------------------------------|--|------------|
| Attendance & Participation | Regular attendance and engagement during hands-on sessions. | 10% |
| Assignments / Practical Work | Periodic practical exercises and assignments based on Excel functions, data analysis, and visualization tasks. | 40% |
| Final Assessment / Project | Mini project demonstrating application of Excel skills | 50% |

7. Resources Required:

Software / Tools: Microsoft Excel 2019 or later

Reading Materials / Reference Books:

- Microsoft Excel Formulas and Functions (Office 2021 and Microsoft 365) by Paul McFedries
- Excel As Data Analysis Tool- From Data to Decision by Vaishali Patil

8. Expected Outcomes / Employability Skills Developed:

- 1. Certificate**
- 2. Learners will develop technical and analytical skills that enhance employability in roles requiring data handling, reporting, and basic automation.**

9. Course Schedule & Timeline:

- 6. Course Start Date:** 01st Dec 2025
- 7. Course End Date:**
- 8. Timetable Slot (if fixed):**

10. Approval Details:

- 9. Proposed by:** Mrs Vaishali Patil, Dr. Mrudula Patkar
- 10. Approved by Dean:**
- 11. Date of Submission to IQAC:**