



B.Com Honours

Semester IV

Calicut University

ADVANCED SPREADSHEET APPLICATIONS IN BUSINESS

Course Code: COM4FS112 • Module 3 Notes

Module III: Advanced Functions, Lookup Tools, & VBA Automation

Mastering complex nested formulas, modern lookup functions (VLOOKUP, INDEX-MATCH, XLOOKUP), Pivot Table reporting engines, interactive Slicers, and VBA macros.

Unit 12: Advanced Formulas & Nested Functions

Building multi-layered logical expressions combining IF, AND, OR, and ISERROR / IFERROR for robust automated business logic.

Unit 13: Lookup Functions – VLOOKUP, HLOOKUP, INDEX-MATCH, & XLOOKUP

- 1. VLOOKUP:** =VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup]). Limited to rightward lookups.
- 2. INDEX-MATCH:** =INDEX(return_range, MATCH(lookup_value, lookup_range, 0)). Dynamic, multi-directional lookup.
- 3. XLOOKUP:** =XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found]). Superior modern function supporting leftward search and default fallback text.

Unit 14: Logical & Conditional Summary Functions

Conditional aggregation: SUMIF(range, criteria, [sum_range]), SUMIFS, COUNTIF, COUNTIFS, AVERAGEIFS.

Unit 15: Pivot Tables & Multi-Dimensional Summarization

Constructing Pivot Tables (Insert → PivotTable). Configuring Field List drop zones (Filters, Columns, Rows, Values), Value Field Settings (Sum, Count, Average, % of Column Total), and Calculated Fields.

Unit 16: Dynamic Reporting with Pivot Charts & Interactive Slicers

Linking Pivot Charts with visual Slicers and Timelines for interactive executive dashboard reporting across regional sales territories and brand categories.

Unit 17: Macros & Automation – Developer Tab & Recording

Enabling Developer Tab, macro security levels (Trust Center settings), recording keystrokes using Macro Recorder, and assigning macros to custom buttons.

Unit 18: Creating Automation Scripts & VBA Subroutines

Writing basic Visual Basic for Applications (VBA) subroutines to automate monthly sales report formatting and credit risk data validation.

Practical Case Framework (VLOOKUP vs INDEX-MATCH vs XLOOKUP Syntax Matrix): Compare lookup formulas retrieving Employee Salary based on Employee ID.

Enterprise Excel Lookup Functions Comparison Matrix:			
Lookup Function	Exact Syntax Structure	Directional Flexibility	Key Advantage / Business Usage
VLOOKUP	=VLOOKUP(102, A2:D100, 4, FALSE)	Rightward search only (col index 4)	Simple traditional lookups from first column
INDEX-MATCH	=INDEX(D2:D100, MATCH(102, A2:A100, 0))	Bi-directional (left or right)	Robust; Not affected by column insertion/deletion
XLOOKUP	=XLOOKUP(102, A2:A100, D2:D100, "Not Found")	Bi-directional + Default error text	Modern standard; Built-in missing value handling

Practical VBA Automation Script Example (Formatting Monthly Sales Summary):

```
Sub FormatSalesHeader()  
  With Range("A1:E1")  
    .Font.Bold = True: .Font.Color = vbWhite  
    .Interior.Color = RGB(26, 54, 93)  
  End With  
End Sub
```

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