

Excel with Macros & VBA – 3 – Formulas & Functions – Course Outline

A. Course Description

Learn or experience a refresher in Best Practices for the creation of Worksheet Formulas, and the use of Worksheet Functions. Learn the similarities and differences between Worksheet and VBA Functions. Learn the differences between VBA Function and VBA Sub (Macro) Procedures, including their Creation, Purpose and Execution. Learn VBA code constructs that can handle multiple conditions with procedures. Examine functions from various Function Categories and learn to create User Defined Functions (UDFs) that simplify their use. Obtain a reference to VBA code Statements and Functions.

B. Performance Goal

This course enables students to understand the purpose and creation of User Defined Functions (UDFs). This is done by working through a number of exercises that consider key Worksheet Functions and then see how UDFs can be created to simplify an end user's use of these functions.

C. Learning Outcomes

1. Learn the 4 Cell Reference methods for Worksheet Formula creation and Worksheet Function use.
2. Learn keyboard shortcuts to show all Formulas in cells and how to select a Cell Reference option.
3. Learn Cell References to be used for a matrix of cell formulas, based on the creation of 1 cell formula.
4. Learn when a Name Range can be used in a formula.
5. Learn where a UDF's code needs to be placed, within the VB* Editor, and what to do if it's missing.
6. Learn the critical code statement that a UDF requires to ensure that it returns a value to a cell.
7. Learn whether or not code generated by the Macro Recorder can be used for a UDF.
8. Learn the 2 ways that a UDF can be inserted into a cell.
9. Learn the 7 points of comparison between a "Sub" procedure and a "Function" procedure.
10. Learn the keyboard shortcuts and alternate Excel screen icon methods of executing a UDF.
11. Learn to use a VBA Function or a VBA Code construct to best handle multiple condition tests.
12. Learn to use Compound Logic Operators AND/OR for the creation of complex condition tests.
13. Learn about the 3 major benefits derived from the use of UDFs.
14. Learn about the 2 ways that you can create end user Help for a UDF.
15. Learn about Boolean Data, Logical and Information Functions and how to use them within UDFs.
16. Learn to create a UDF to replace many separate formulas used to display data into date ranges.
17. Learn about Text Manipulation Functions and Custom Date Formats and how to use these in UDFs.
18. Learn about Public and Private UDFs and when to use them and how to fix errors with Private UDFs.
19. Learn to create Fiscal Quarter & Year UDFs and how to PivotTable fields assigned these UDF values.
20. Learn to enable Flexible Date Filters by converting Dates into Text values, and then using Text Filters.
21. Learn to make VLOOKUP functions "unbreakable", and simplify "VLOOKUP functionality" via UDFs.
22. Learn to use the SUBTOTAL function to make Data Filter Calculations, and simply its use via a UDF.
23. Learn to use a Reference for VBA Functions, and a List of Worksheet Functions available within VBA.

* VB = Visual Basic | VBA = VB for Applications