
Excel – VBA Programming

National Competency Standard (ICT)

ICTPRG301: Apply introductory programming techniques

Objectives

The skills and knowledge acquired in this course are sufficient to be able to create working VBA applications within Excel. The learner will be able to work with VBA within the Excel environment to program and automate worksheet operations.

Pre-Requisite Skills

Successful completion of NDA's Excel Advanced course or equivalent experience is required.

Duration

Two days.

Course Outcomes

After completing this course, students will know how to:

1. Create recorded macros in Excel
2. Use the macro recorder to create a variety of macros
3. Understand the Excel object model and VBA concepts
4. Work effectively with the main features of the VBA Editor window
5. Create procedures in VBA
6. Create and use variables
7. Create and work with user-defined functions in VBA
8. Write code to manipulate Excel objects
9. Use a range of common programming techniques
10. Create a custom form complete with an assortment of controls
11. Create code to drive a user form
12. Create procedures that start automatically
13. Write a variety of error handling routines

Optional Assessment

This is a nationally recognised training program. Participants who successfully complete the optional assessment component of this course will receive a Statement of Attainment for the unit of competency outlined above (additional fee applies – please enquire when you book). Participants who choose not to be assessed will receive a Certificate of Attendance. Exercises completed during the course will be used as evidence towards unit competency.

Course Content

Recorded Macros

- Understanding Excel Macros
- Setting Macro Security
- Saving A Document As Macro Enabled
- Recording A Simple Macro
- Running A Recorded Macro
- Relative Cell References
- Running A Macro With Relative References
- Viewing A Macro
- Editing A Macro
- Assigning A Macro To The Toolbar
- Running A Macro From The Toolbar
- Assigning A Macro To The Ribbon
- Assigning A Keyboard Shortcut To A Macro
- Deleting A Macro
- Copying A Macro

Recorder Workshop

- Preparing Data For An Application
- Recording A Summation Macro
- Recording Consolidations
- Recording Divisional Macros
- Testing Macros
- Creating Objects To Run Macros
- Assigning A Macro To An Object

Understanding Excel VBA

- Programming In Microsoft Excel
- VBA Terminology
- Understanding Objects
- Viewing The Excel 2010 Object Model
- Using The Immediate Window
- Working With Object Collections
- Setting Property Values
- Working With Worksheets
- Using The Object Browser
- Programming With The Object Browser
- The Best VBA Help Available

The VBA Editor

- The VBA Editor Screen
- Opening And Closing The Editor
- Using The Project Explorer
- Working With The Properties Window
- Using The Work Area
- Viewing Other Panes
- Working With Toolbars
- Working With A Code Module
- Running Code From The Editor
- Setting Breakpoints In Code
- Stepping Through Code Procedures
- Understanding Procedures
- Where Procedures Live
- Creating A New Sub Routine
- Making Sense Of IntelliSense
- Using The Edit Toolbar
- Commenting Statements
- Indenting Code
- Bookmarking In Procedures

Using Variables

- Understanding Variables
- Creating And Using Variables
- Explicit Declarations
- The Scope Of Variables
- Procedure Level Scoping
- Module Level Scoping
- Passing Variables By Reference
- Passing Variables By Value
- Data Types For Variables
- Declaring Data Types
- Using Arrays

Functions In VBA

- Understanding Functions
- Creating VBA Functions
- Using A VBA Function In A Worksheet
- Setting Function Data Types
- Using Multiple Arguments
- Modifying A VBA Function
- Creating A Function Library
- Referencing A Function Library
- Importing A VBA Module

- Using A Function In VBA Code

Using Excel Objects

- The Application Object
- The Workbook Objects
- Program Testing With The Editor
- Using Workbook Objects
- The Worksheets Object
- Using The Worksheets Object
- The Range Object
- Using Range Objects
- Using Objects In A Procedure

Programming Techniques

- The MsgBox Function
- Using MsgBox
- InputBox Techniques
- Using The InputBox Function
- Using The InputBox Method
- The IF Statement
- Using IF For Single Conditions
- Using IF For Multiple Conditions
- The Select Case Statement
- Using The Select Case Statement
- For Loops
- Looping With Specified Iterations
- The Do...Loop Statement
- Looping With Unknown Iterations

Creating Custom Forms

- Understanding VBA Forms
- Creating A Custom Form
- Adding Text Boxes To A Form
- Changing Text Box Control Properties
- Adding Label Controls To A Form
- Adding A Combo Box Control
- Adding Option Buttons
- Adding Command Buttons
- Running A Custom Form

Programming UserForms

- Handling Form Events
- Initialising A Form
- Closing A Form
- Transferring Data From A Form
- Running Form Procedures
- Creating Error Checking Procedures
- Running A Form From A Procedure
- Running A Form From The Toolbar

Automatic Startup

- Programming Automatic Procedures
- Running Automatic Procedures
- Automatically Starting A Workbook

Error Handling

- Understanding Error Types
- The On Error Statement
- Simple Error Trapping
- Using The Resume Statement
- Using Decision Structures In Error Handlers
- Working With Err Object
- Error Handling In Forms
- Coding Error Handling In Forms
- Defining Custom Errors