

## Visual Basic for Applications in Microsoft Excel

The aim of this course is to enable you to create sophisticated spreadsheet solutions in Excel, with the ability to extract and manipulate data. Also to enable you to manage your Visual Basic code and distribute your application to other users.

### 1 Visual basic explained

#### Aims of this session

To explain the constructs and principles required for manipulating Excel objects through Visual Basic

#### On completing this session you will understand

- the Excel object model
- objects and collections
- methods and properties
- how to use VBA help

### 2 The VB Code editor

#### Aims of this session

To enable you to use the facilities provided by Project Explorer, and to create modules and basic subroutines

#### On completing this session you will be able to

- use Project Explorer
- create VB modules
- understand coding conventions
- create and comment basic subroutines

### 3 Variables and Messages

#### Aims of this session

To understand variable types and how to declare them, and to understand scope of variable declarations. Also how to use input and message boxes.

#### On completing this session you will be able to

- Understand variable types and when to use them
- Declare variables
- Understand scope of variables
- How to declare and use constants
- Use message boxes

### 4 Loops and conditions

#### Aims of this session

This session enables you to create conditional branches in your programs, and also to iterate a part of your program a set number of times or until a condition is true.

#### On completing this session you will be able to

- Use simple IF statements
- Use multiple IF conditions and SELECT... CASE
- Use the 3 main types of loop

## **5 Looping over collections**

### **Aims of this session**

To use your knowledge of loop constructs and Excel objects and collections to enable you to loop over collections of objects.

### **On completing this session you will be able to**

- Understand object variables
- Declare and initialise object variables
- Loop over collections

## **6 Event handling**

### **Aims of this session**

To develop an understanding of event driven programming, and enable you to program event handlers

### **On completing this session you will be able to**

- Understand the important events to handle
- Assign macros to events
- Cancel events

## **7 Functions**

### **Aims of this session**

To understand the reasons for using functions, and the principles of creating them.

### **On completing this session you will be able to**

- Decide when it is appropriate to use a function
- Declare a function and appropriate arguments
- Understand how to pass arguments to a function
- Return a value from a function

## **8 Running code, debugging and error handling**

### **Aims of this session**

To enable you to use Visual Basic tools to run your code, to analyse the flow of your program and detect bugs. Also to understand error handling.

### **On completing this session you will be able to**

- Run code from your development environment
- Run code from your application
- Set breakpoints to stop your program
- Step through a program or macro line by line
- Examine the value of variables at any point
- Respond to error conditions in a way which is helpful to the user

## 9 Forms

### **Aims of this session**

To enable you to design and create forms and program the properties and events of your form.

### **On completing this session you will be able to**

- Design user friendly forms
- Work with form controls
- Create custom dialog boxes
- Program properties and events of the form