



# Programming and Data Wrangling with VBA and Excel

Course ID: 7000-418-ZZ-Z

Hours: 21

## Course Content

### Course Description:

VBA (Visual Basic for Applications) enables you to enhance and extend the capabilities of Microsoft® Excel® and other applications in the Microsoft® Office application suite. You can use VBA to perform tasks that would be difficult or impossible to do using only worksheet functions, and you can automate a wide range of tasks involving the collection, processing, analysis, and visualization of data. This course will give you a good foundation for understanding, creating, and using VBA in your own Excel workbooks, show you how to work with data across different applications, and how to package the macros and functions you create so you can back them up, move them to other computers, and share them with other users.

### At Course Completion:

After competing this course, student will be able to:

- Identify general components of VBA and their appropriate use in solving business solutions.
- Record VBA macros to automate repetitive tasks.
- Use reference tools built into Excel to get help on VBA programming language and objects used in the Excel VBA environment.
- Write VBA code to create a custom worksheet function.
- Eliminate, avoid, or handle errors in VBA code, and optimize its performance.
- Control how and when macros run.
- Develop UserForm objects to create custom dialog boxes and windows.
- Use VBA to read and write data from local files and cloud services.
- Use VBA to clean and transform data.
- Run programs and commands outside of Excel and share VBA projects with other users.

### Prerequisites:

To ensure your success in this course, you should be an experienced Excel user who is comfortable creating and working with Excel workbooks, including tasks such as entering worksheet formulas, using absolute and relative addressing, formatting cells, and creating pivot tables and charts.



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## Target Student:

This course is primarily designed for students who want to gain the skills necessary to use VBA to automate tasks in Excel such as collecting data from external sources, cleaning, and manipulating data. The target student may also want to learn how to create custom worksheet functions to streamline worksheet formulas and make complex worksheets easier to support, maintain, and understand.

## Topics:

### Lesson 1: Using VBA to Solve Business Problems

- Topic A: Use Macros to Automate Tasks in Excel
- Topic B: Identify Components of Macro-Enabled Workbooks
- Topic C: Configure the Excel VBA Environment

### Lesson 2: Automating Repetitive Tasks

- Topic A: Use the Macro Recorder to Create a VBA Macro
- Topic B: Record a Macro with Relative Addressing
- Topic C: Delete Macros and Modules
- Topic D: Identify Strategies for Using the Macro Recorder

### Lesson 3: Getting Help on VBA

- Topic A: Use VBA Help
- Topic B: Use the Object Browser to Discover Objects You Can Use in VBA
- Topic C: Use the Immediate Window to Explore Object Properties and Methods

### Lesson 4: Creating Custom Worksheet Functions

- Topic A: Create a Custom Function
- Topic B: Make Decisions in Code
- Topic C: Work with Variables

- Topic D: Perform Repetitive Tasks

### Lesson 5: Improving Your VBA Code

- Topic A: Debug VBA Errors
- Topic B: Deal with Errors
- Topic C: Improve Macro Performance

### Lesson 6: Controlling How and When Macros Run

- Topic A: Prompt the User for Information
- Topic B: Configure Macros to Run Automatically

### Lesson 7: Developing Custom Forms

- Topic A: Display a Custom Dialog Box
- Topic B: Program Form Events

### Lesson 8: Using VBA to Work with Files

- Topic A: Use VBA to Get File and Directory Structure
- Topic B: Use VBA to Read Text Files
- Topic C: Use VBA to Write Text Files

### Lesson 9: Using VBA to Clean and Transform Data

- Topic A: Automate Power Query
- Topic B: Transform Data Using VBA and Workbook Functions



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- Topic C: Use Regular Expressions
- Topic D: Manage Errors in Data

## **Lesson 10: Extending the Programming Environment Beyond the Workbook**

- Topic A: Run Other Programs and Commands
- Topic B: Share Your VBA Projects