

# Common Course Outline

CINS 121

Introduction to VBA

3 Semester Hours

## The Community College of Baltimore County

### Description

#### **Introduction to VBA**

Introduces Visual Basic for Applications (VBA), applying programming concepts with Word, Excel, and Access; includes accessing the objects contained in object models, writing procedures using the sequence, selection, and repetition programming structures and creating dialog boxes. You should have a basic knowledge of Microsoft Office, but no prior programming experience is necessary.

3 credits: 3 lecture hours (this course is delivered in a combination lecture and hands-on format).

Prerequisite: CINS 101 or consent of or consent of the Program Director or Academic Dean.

### Overall Course Objectives

Upon successfully completing the course students will be able to:

1. Recognize the components of the Visual Basic editor.
  - Create a procedure.
  - Run, save, and print a procedure.
  - Plan the code.
2. Use the objects contained in an application's object module.
  - Use the Word object module.
  - Use the Excel object module.
  - Use the Access object module.
3. Identify data types and variables.
4. Understand how properties and variables are stored in memory.
5. Perform calculations.
6. Use the selection structure.
7. Use the repetition structure.
8. Manipulate data using built-in functions.
9. Creating dialog boxes.
10. Add controls such as text boxes and labels to forms.
11. Perform Automation.
12. Use debugging tools.
13. Demonstrate the importance of testing and validating the solution.

### Major Topics

- I. Role of different programming languages
  - A. Procedural
  - B. Event-driven
  - C. Object-oriented
- II. Visual Basic editor
  - A. Create a procedure
  - B. Run and save procedure
  - C. Print a procedure
- III. Objects in an application's object model
  - A. Object browser
  - B. Commonly used objects in Excel, Word, and Access
- IV. Properties and variables
  - A. Dim statement
  - B. Names and data types for an object variable
  - C. Set statement
- V. Word using VBA
  - A. Assign a theme to Word
  - B. Create a hyperlink in Word
  - C. Create a custom toolbar
  - D. Use the TableOfContents collection and objects
- VI. Excel using VBA
  - A. Insert row, value, and formula
  - B. Format a spreadsheet
  - C. Add a list box
  - D. Use the VLookup function
  - E. Use the PublishObjects collection and objects
  - F. Use the CurrentRegion and Resize properties
- VII. Access using VBA
  - A. Open a report
  - B. Order records
  - C. Summary forms
  - D. Create custom toolbar
  - E. Use the Find method
  - F. Use the DoCmd object
  - G. Apply the OpenReport method
- VIII. Functions
  - A. InputBox
  - B. Val
  - C. Date, Time, and Now
  - D. UCase
  - E. MsgBox
  - F. String functions
- IX. Calculations
- X. Selection structure
  - A. If/Then/Else statement
  - B. Nested If statements

- C. One and two dimensional arrays
- XI. Repetition structure
  - A. For/Next statement
  - B. For Each/Next statement
  - C. Do/Loop statement
- XII. Dialog boxes
  - A. Code a custom dialog box
  - B. Use Windows standards
- XIII. Controls
  - A. Option buttons
  - B. Check boxes
  - C. List box
- XIV. Automation
  - A. Differentiate between an Automation server and an Automation controller
  - B. Perform Automation
- XV. Error trapping
  - A. Access the information stored in the Err object
  - B. Intercept and handle run-time errors
  - C. Prevent multiple instances of an application

### **Course Requirements**

Grading: Grading procedures will be determined by the faculty member, will be provided the first week of class, and will include:

1. Minimum of 7 programming projects
2. Minimum of 2 tests
3. Comprehensive final or programming project

### **Other Course Information**

This course is required in CIS: IT Support, meets the programming language requirement in CIS: Programming and is a CIS elective.

This course is taught in a computerized environment.