



Broward Community College

Course Outline

STATUS: A

COMMON COURSE NUMBER: COP 2171C

COURSE TITLE: Visual Basic Programming

CREDIT HOURS: 3

CONTACT HOURS BREAKDOWN:

Lecture/Discussion 48

Lab 16

Other 00

Contact Hours/Week 4

CATALOG COURSE DESCRIPTION:

Prerequisite: COP1170 or COP1334C

Corequisite: NONE

This course teaches how to create Visual Basic based programs. Students write programs that access databases, use OLE to integrate applications, and act as an OLE Server and as an add-in. This class assumes a working knowledge of basic programming (COP1170).

General Education Requirements - Associate of Arts Degree, meets Area(s):
General Education Requirements - Associate in Science Degree, meets Area(s):

UNIT TITLES:

1. QBasic Fundamentals
2. Planning/Writing/Debugging an Application
3. Sequential Files
4. Arrays
5. Random Files
6. Introduction to Graphics
7. Using Custom Controls
8. Interfacing with Databases
9. Dragging and Dropping
10. Communicating With Other Applications: OLE

I. Course Overview:

Upon successful completion of this course, the students should be able to create applications software or applications in Visual Basic utilizing various objects/controls with appropriate properties that are required for successful execution in a Windows environment.

II. Units:

Unit 1. QBasic Programming Fundamentals

General Outcome:

- 1.0 The students should be able to demonstrate an understanding of data types, looping decisions, functions, and subroutines written in QBasic.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Describe the different data types (real, integers, and strings).
- 1.2 Describe the different loop types (Do/While and For/Next).
- 1.3 Describe decisions (relational and logical operators).
- 1.4 Describe functions and subroutines.

Unit 2. Planning/Writing/Debugging an Application

General Outcome:

2.0 The students should be able to design and develop an application following a methodical approach and utilize the debugging tools of Visual Basic when needed.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Apply five phases of designing and writing an application.
- 2.2 Recognize an event-driven application.
- 2.3 Create the use interface.
- 2.4 Set properties.
- 2.5 Write code.
- 2.6 Utilize debugging tools.

Unit 3. Sequential Files

General Outcome:

- 3.0 The students should be able to store and retrieve data in a file on an auxiliary device such as a floppy disk or hard disk.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Describe a sequential file.
- 3.2 Open a sequential file.
- 3.3 Close a sequential file.
- 3.4 Read a sequential file.
- 3.5 Write to a sequential file.
- 3.6 Update a sequential file.

Unit 4. Arrays

General Outcome:

- 4.0 The students should be able to use more complex data structures, called arrays, in a program to store and manipulate data.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Define and dimension an array.
- 4.2 Display subscripts in single and multiple-dimension arrays.
- 4.3 Create general procedures and subroutines.
- 4.4 Create general sort routine.
- 4.5 Utilize the printer object.
- 4.6 Utilize list boxes and combo boxes.

Unit 5. Random Files

General Outcome:

5.0 The students should be able to explain the difference between a random file and a sequential file and recognize its several advantages over that of a sequential file.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Create a random file.
- 5.2 Access a random file.
- 5.3 Maintain a random file.
- 5.4 Specify a record structure.
- 5.5 Apply a code module of the code window.
- 5.6 Create a custom menu.

Unit 6. Introduction to Graphics

General Outcome:

6.0 The students should be able to visually enhance the interface and output of an application with graphics using the graphical controls that can be added at design time and/or run time.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 6.1 Use the units of measurement for forms, picture boxes, and the printer object.
- 6.2 set up a custom coordinate system.
- 6.3 Utilize graphical controls and methods.
- 6.4 Draw a line graph, a bar graph, and a pie chart.

Unit 7. Using Custom Controls

General Outcome:

- 7.0 The students should be able to use the custom controls for grid control and common dialog control in Visual Basic

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 7.1 Use the grid control.
- 7.2 Add text and graphics to a grid.
- 7.3 Apply the common dialog control.
- 7.4 Display a color dialog box.
- 7.5 Display a font dialog box.
- 7.6 Apply information supplied by dialog boxes.
- 7.7 Utilize the CancelError property to trap run-time errors.

Unit 8. Interfacing with Databases

General Outcome:

- 8.0 The students should be able to utilize the Data Control to link an application with a database performing retrieve, add, edit, delete data from external databases, and, alternatively, choose the Data Manager provided by Visual Basic.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 8.1 Describe what a database is.
- 8.2 Use the data control with and/or without code.
- 8.3 Link or bind bound controls to a data control.
- 8.4 Build a control array.
- 8.5 Display database information using a grid.
- 8.6 Examine and create a database using the Data Manager.

Unit 9. Dragging and Dropping

General Outcome:

9.0 The students should be able to implement dragging and dropping a control and the snap-back effect.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

9.1 Add drag-and-drop feature to an application.

9.2 Use the DragDrop event.

9.3 Use the DragOver event.

9.4 Use the Drag method.

Unit 10. Communication with Other Applications: OLE

General Outcome:

10.0 The students should be able to implement the object linking and embedding (OLE) feature to include charts, graphs, and spreadsheets in his/her application.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 10.1 Describe what embedded and linked objects are.
- 10.2 Define objects by their class.
- 10.3 Embed an object at design time.
- 10.4 Link an object at design time.
- 10.5 Embed an object at run time.
- 10.6 Link an object at run time.
- 10.7 Use the various methods associated with OLE container control.
- 10.8 Set the OLE related properties of the OLE container control.