

SYLLABUS PART I  
EDISON COMMUNITY COLLEGE  
CIT 225S VISUAL BASIC PROGRAMMING  
3 CREDIT HOURS

**COURSE DESCRIPTION**

Software design and development emphasizing visual development techniques and the integrated environment provided by Microsoft Visual Basic. Provides the student with an introduction to Windows programming using object-oriented, event-driven programming methods. User interface design is emphasized; control flow, selection structures, and repetition structures are reviewed; use of sequential and random access files, error trapping, arrays, an introduction to databases using ADO.NET is also presented. Prerequisite: ENG 091D, ENG093D, MTH 098D or equivalent, CIT 110S. Recommended Preparation: CIT 111S. Lab Fee.

**COURSE GOALS**

The student will:

Bloom's Level		Program Objective
2	1. Execute the software development process and use a planned approach when writing computer programs to solve object-oriented, event-driven problems.	3, 4, 7, 12
2	2. Use Visual Basic to write OOED programs emphasizing user control over the program.	3, 4, 7, 12
2, 3	3. Use a team approach to develop a computer program.	6
5	4. Create appropriate documentation within Visual Basic programs.	9
4	5. Analyze program compiler statements, and implement appropriate corrective actions for error-trapping.	7, 8
2	Discuss the importance of ethics in the computer industry, and the role they play in the field of computer programming.	10, 13

**CORE VALUES**

The Core Values are a set of principles which guide in creating educational programs and environments at Edison. They include communication, ethics, critical thinking, human diversity, inquire/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

**TOPIC OUTLINE**

1. Introduction to Visual Basic .NET and program design
2. The Visual Basic .NET Integrated Development environment
3. Building an application in the Visual Basic .NET environment
4. Program and Graphical User Interface Design
5. Creating GUI Mock-ups
6. Adding objects to a Windows form
7. Aligning objects on the Windows form
8. Saving Visual Basic Projects

9. GUI Design Principles
10. Project Development Life Cycle
11. Program Design and Coding
12. Using IntelliSense
13. BackColor Property of Objects and Displaying Images
14. Using the Visual Studio Editor to Correct Errors and Run Completed Program
15. Creating an Event Planning Document
16. Declaring Variables
17. Gathering Input for an Application
18. Differentiating Data Types
19. Performing Mathematical Calculations
20. Variable Scope
21. TextBox Objects
22. Creating Mobile Applications for Handheld Computers
23. Decision making (If...Then, If...Then...Else, Nested If Statements)
24. Logical Operators and Case Statements
25. Panel Object, Placing RadioButton objects, Displaying a Message Box
26. Inserting Code Snippets
27. Testing Input to Test Validity
28. Loop Structures (Do While, Do Until, For...Next, For Each...Next, While...End While)
29. Priming a Loop
30. Creating a Nested Loop
31. Selecting the Best Type of Loop
32. Infinite Loops
33. Validating Data
34. Compound Operators, Counters, and Accumulators
35. Inserting a MenuStrip object
36. Using the InputBox function
37. Displaying Data Using a ListBox object
38. Debugging Programs Using DataTips at Breakpoints
39. Publishing a Finished Application Using ClickOnce Technology
40. Creating Web Applications
41. Creating an Interactive Web Form That Requests Data From Users
42. Employ ASP.NET 2.0 Tools to Create Appealing, User-Friendly Web Applications
43. Inserting and Modifying Properties for the CheckBox, DropDownList, Calendar Objects, and Custom Tables.
44. Validating Data on Web Forms
45. Formatting Text Using the HTML <br> Tag
46. String Manipulation Properties and Procedures in the Visual Basic String Class
47. Using Procedures and Exception Handling
48. Creating a Splash Screen to Display as a Program Loads
49. Sub and Function Procedures
50. Coding a Function Procedure that Returns a Value
51. Creating a Class-Level Variable
52. Using Try=Catch Blocks to Detect Errors and Take Corrective Actions
53. Using Arrays and File Handling
54. Sorting
55. Calculating and Displaying Data
56. Reading Data from a File
57. Displaying Data in a ComboBox Object
58. Creating Windows Applications with Multiple Forms

59. Importing Databases with ADO.NET 2.0
60. Using ADO.NET 2.0 to Update, Add, and Delete Data
61. Retrieving Data Information for Viewing and Decision Making Using ADO.NET 2.0
62. Creating a Visual Basic Application that Connects to a Microsoft Access database.
63. Using Visual Basic Applications to Add, Select and Delete Records
64. Creating a Class
65. Instantiating Objects
66. Writing a Class Constructor
67. Calling a Procedure in a Separate Class
68. Using Inheritance to code a Base Class and a Subclass
69. Calling Procedures in Base and Subclasses.
70. Writing Overridable Procedures
71. Overriding Procedures
72. Creating and Writing a Comma-Delimited Text File
73. Creating Programs for Windows-Based Cell Phones
74. Using Crystal Reports to Create Business Reports