

Vikram University, Ujjain

Board of studies in Computer science (Faculty of Engineering Science)

SYLLABUS of

Certificate Course in VB.NET Technology

Exclusively for University Teaching Department (ICS,VUU)

(Effective from Academic Session 2020-21)

PROGRAMME TITLE: Certificate Course in Programming with VB.Net

PROGRAMME OBJECTIVES:

Visual Basic .NET is an object oriented programming language implemented on the .NET framework. Becoming certified in Visual Basic demonstrates to potential employers that you have the knowledge and skills to be productive using this language in a workplace environment.

PROGRAMME OUTCOMES (POs)

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

- Explain the architecture of Dot Net platform
- Develop Simple software using various controls and implement the concept of VB
- Develop interaction of front end with database using facilities of .NET platform
- Deploy .Net Applications

After Completion of the programme students are able to work as-

- Web Developer in Software company
- Instructor in Computer Lab

COURSE STRUCTURE

Certificate Course in VB.NET Technology

Time Duration: 6 Months

SN	Course code	Title	End term sem Exam	Internal	Max Marks
1	CVB-101	Programming Skill Development using 'C' and 'C++'	75	25	100
2	CVB-102	Programming with Visual Basic .NET	75	25	100
3	CVB-103	Project Work	150	50	200
		Total			400

CVB–101 Programming Skill Development using ‘C’ and ‘C++’

UNIT 1

Character Set, Identifiers, Keywords, Variables, Character Strings, Typecasting, Constants, Operator and Expression, Operator Precedence and Associativity.

Control Statements: If, If-Else, Multi-way decision, Compound Statements, loops: for, while do-while, break, switch, continue statement, Arrays, Strings.

UNIT 2

Functions: Introduction, Parameter Passing: call by value, call by reference, return values, recursion vs iteration, scope extent, passing arrays and function to functions.

Pointers: Introduction, address operator, pointer variables, pointer arithmetic, pointer to pointer, array of pointers. Structures: Operations, self referential structure, array of structure.

UNIT 3

Introduction to traditional programming with C, Object Oriented Programming, Objectives of OOP, Procedural VS OOP, Concepts of Objects, Classes, Data Abstraction, Encapsulation, Inheritance, Polymorphism, Dynamic Binding and Message passing.

Classes and Objects: Classes, Structure & Classes, Friend Function, Friend Classes, Inline Function, Static Data Member, Static Member Function, Passing object to function, Returning objects, Array of object.

UNIT 4

Constructor and Destructor: Introduction, Default constructor, Parameterized constructor, Multiple constructor in a class, Constructor with default argument, Copy constructor, Destructor.

Function and Operator Overloading: Function overloading, Creating a member operator function, Operator overloading using friend function.

UNIT 5

Inheritance and Polymorphism: Introduction, Base and Derived Classes, Base class access control, Protected members, Single Inheritance, Multiple Inheritance, Multilevel inheritance, Hierarchical Inheritance, Hybrid inheritance. Virtual function, Virtual base classes.

Template: Class templates, Class templates with multiple parameters, Function templates, Function templates with multiple parameters, Overloading of template functions.

Reference Books:

1. Kanetkar y: Let us C.
2. Cooper, Mullish : The spirit of C. An introduction to modern programming, Jaico Publ. House, New Delhi, 1987.
3. Kenneth, A. : C problem solving and programming, Prentice Hall international.
4. Object-Oriented Programming with C++: E. Balagurusamy, TMH, 2005
5. Object Oriented Programming in C++, Robert Lafore, Galgotia Publication.
6. Object Oriented Programming, Tomothy Budd, Pearson education.

CVB-102- Programming with Visual Basic .NET

UNIT 1

Introduction to .NET, .NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries. Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser.

UNIT 2

The VB.NET Language- Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Subroutines, Functions, Passing variable, Number of Argument, Optional Argument, Returning value from function. Control flow statements: conditional statement, loop statement. MsgBox & Inputbox.

UNIT 3

Working with Forms : Loading, showing and hiding forms, controlling One form within another. Using MDI form. Windows Form Control (with Properties, Methods and events): Textbox, Rich Text Boxes, Label, Link Label, Button, Checkbox, Radio Button, Panel, Group Box, Picture Box, Listbox, Combobox, Check Listbox, scroll bar, Timer. Advance Controls: Menus, Context Menus , Built-in Dialog Box: OpenFileDialog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog, Printing. ListView, TreeView, toolbar, StatusBar..

UNIT 4

Object oriented Programming: Classes & objects, constructor, destructor, inheritance. Access Specifiers, Interfaces, Polymorphism. Exception Handling: using Try, Catch, Finally, Throw Keywords. Graphics Handling: Using Graphics & Pen classes for drawing colors and figures. File Handling: Opening or Creating a File, Writing & Reading Text.

UNIT 5

Database programming with ADO.NET – Overview of ADO, from ADO to ADO.NET, Accessing Data using Server Explorer. Creating Connection, Command, Data Adapter and Data Set with OLEDB and SQLDB. Display Data on data bound controls, display data on data grid. Generate Reports Using CrystalReportViewer.

Reference Books:

1. VB.NET Programming Black Book by Steven Holzner – Dreamtech Publications
2. Mastering VB.NET by Evangelos Petroustos- BPB Publications
3. Introduction to .NET Framework- Wrox Publication