

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

Course Curriculum

SOFTWARE PRACTICES WITH VB.NET (Code: 3331603)

Diploma Programme in which this course is offered	Semester in which offered
Information Technology	3rd Semester

1. RATIONALE

VB.NET is widely used technology for development of web based applications in industry and commerce. Integrated development environment (IDE) is comprehensive integrated suit that helps in development and debugging from the single user interface which is predominantly GUI based. Competence in development of VB.NET based web-applications is primary ability deemed necessary for an IT professionals, hence this course is important for students.

2. COMPETENCY(Programme Outcome according to NBA Terminology):

The course content should be taught and implemented with the aim to develop different types of skills so that students are able to acquire following competency:

- **Develop relevant software applications in VB.NET.**

3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE	PA	ESE	PA	100
0	2	2	4	00	00	40	60	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit; ESE - End Semester Examination; PA - Progressive Assessment

4. COURSE DETAILS

Unit	Major Learning Outcomes (Course Outcomes in Cognitive Domain according to NBA terminology)	Topics and Sub-topics
Unit – I Introduction to Visual Studio 2008	1a. Describe the use of IDE components.	1.1 Concept IDE- Menu, Tool Bars, Property Window, Solution Explorer, Windows Form
	1b. Use IDE environment to develop application.	1.2 Designer, Visual Basic Code Editor
	1c. Create simple console program.	1.3 Console Applications Development- an Introduction
	1d. Write simple program.	1.4 Writing First VB.NET Program
	1e. Debug simple application.	1.5 Debugging – an introduction

Unit	Major Learning Outcomes (Course Outcomes in Cognitive Domain according to NBA terminology)	Topics and Sub-topics
Unit – II Fundamentals Of VB.NET	2a. Define storage capacity and range of different data types and variables.	2.1 Data Types, Variables and Constants
	2b. Apply control statements according to logic of program.	2.2 Program Control Statements i. Loop Structure(For/Next, While, Do while, Do Until) ii. Test Structure (If Else, Nested If, Select Case)
	2c. Compare subroutines, Functions and Events.	2.3 Subroutines, Functions and Events
	2d. Define advanced data types. 2e. Apply different properties and methods of advanced data types in simple application.	2.4 Arrays, Enumerations, Structures
Unit – III Windows Forms Common Controls	3a. Design windows form of simple application. 3b. Set properties of different windows form controls. 3c. Identify appropriate control for the given program. 3d. Apply different methods of controls in simple application. 3e. Develop simple application using different controls – Facilitating user interaction.	3.1 Form, Label, Button 3.2 Textbox, Rich text box 3.3 Radio Button, Check Box, 3.4 List Box, Combo Box 3.5 Scrollbar, Trackbar 3.6 TreeView, Listview (Basic properties, methods and events of each control)
Unit – IV Advance Form Controls	4a. Use dialog boxes to open & save file to the local disk. 4b. Apply formatting options.	4.1 Dialog Boxes(OpenFileDialog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog)
	4c. Create menu driven simple application.	4.2 Menus
	4d. Create Multiple Document Interface application.	4.3 MDI Form
Unit – V Exception Handling	5a. State types of errors. 5b. Differentiate Errors.	5.1 Types Of Error
	5c. Analyse error prone code.	5.2 Error Detection
	5d. Handle exception occurred at runtime.	5.3 Exception Handling 5.4 Structured Error Handling(Try-Catch-Finally) 5.5 Throwing Manual Exception

5. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (THEORY)

Note: There is no end of the term exam in this course and hence this table is not applicable.

6. SUGGESTED LIST OF EXERCISES/PRACTICAL

The practical/exercises should be properly designed and implemented with an attempt to develop different types of practical skills (**Course Outcomes in psychomotor and affective domain**) so that students are able to acquire the competencies (Programme Outcomes). Following is the list of practical exercises for guidance.

Note: Here only Course Outcomes in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to development of **Programme Outcomes/Course Outcomes in affective domain** as given in a common list at the beginning of curriculum document for this programme. Faculty should refer to that common list and should ensure that students also acquire those Programme Outcomes/Course Outcomes related to affective domain.

S. No.	Unit No.	Practical/Exercise (Course Outcomes in Psychomotor Domain according to NBA Terminology)	Approx Hrs. Required
1	I	Implement Arithmetic calculator using console.	2
2	II	Develop a program to produce grade sheet using console.	2
3		Develop a program to check given number is prime or not using console.	2
4		Develop a program to print Fibonacci series using console.	2
5		Develop a program to check given number is palindrome or not using console.	2
6		Develop a program to factorial of a number using function using console.	2
7		Create form to demonstrate use of methods and properties of array.	2
8	III	Display message using Textbox, Label and ButtonControl.	2
9		Implement simple textpad to perform undo, redo, cut, copy, paste, select all, find, replace, loadfile, savefile operations using richtextbox.	2
10		Create employee registration form to collect details (using radio button, checkbox and other controls).	2
11		Create form to select hobbies and nationality using checkbox and radio button.	2
12		Create a form to demonstrate use of methods and properties of listbox.	2
13		Create a form to demonstrate use of methods and properties of combobox.	2
14		Implement canteen order form to take order from customer (using listbox and combobox)	2
15		Create a form to change the height and width of label using trackbar.	2
16		Implement colour palate to change the backcolor and forecolor of textbox using scrollbar.	2
17		Create form to demonstrate use of methods and properties of treeview.	2

S. No.	Unit No.	Practical/Exercise (Course Outcomes in Psychomotor Domain according to NBA Terminology)	Approx Hrs. Required
18		Create form to demonstrate use of methods and properties of Listview.	2
19	IV	Create MDI application having file menu (New, Open, Save, Print, Close) and Format menu (Font, Forecolor, Backcolor).	2
20	V	Create form to demonstrate use of structured exception handling.	2
Total			40

Notes: (i) Develop or create means write, debug, execute and test the program
(ii) In tutorials - Students will write programs and in practical session -execute program

7. SUGGESTED LIST OF STUDENT ACTIVITIES

Following is the list of proposed student activities like:

- i Develop programs related with topics, in accordance with the sequence of the units, states in the course in computer laboratory.
- ii Develop at least one programming module of a real life application.
- iii Prepare multimedia presentation of module developed.
- iv Search internet for VB.NET based learning resources, programming examples and code segments for re-use in your application.
- v Consult Library and the internet to find & state title, and features of periodicals/journals in area of VB.NET based applications development.

8. SPECIAL INSTRUCTIONAL STRATEGY (If Any)

Concepts should be explained thoroughly in tutorial sessions and should be implemented in laboratory appropriately along with the problem solving. Concepts should be developed by giving problems to students as assignments and in tutorials.

9. SUGGESTED LEARNING RESOURCES

(A) List of Books:

S. No.	Title of Books	Author	Publication
1	Beginning Visual Basic 2008	Thearon Willis, Bryan Newsome	Wrox Publication, New Delhi, 2008
2	Visual Basic 2008 Programmer's Reference	Rod Stephens	Wrox Publication, New Delhi, 2008
3	VB.Net in Nutshell, 2 nd Edition.	Steven Roman, Paul Lomax	Oreilly

B. List of Major Equipment/Materials

- i Computer with configuration to work with MS visual studio
- ii Multimedia Projector
- iii Internet access, and
- iv Access to library resources

C List of Software/Learning Websites

- i. Software : Microsoft Visual Studio 2008
- ii. VB2008 Tutorial - Visual Basic Tutorial:
www.vbtutor.net/vb2008/vb2008tutor.html
- iii. Visual Basic .NET 2008 Tutorial:
<http://www.sourcecodester.com/Tutorials/visual-basic-net/visual-basic-net-2008-tutorial.html>

10. COURSE CURRICULUM DEVELOPMENT COMMITTEE**Faculty Members from Polytechnics**

- **Prof. Rikita D. Parekh**, Lecturer in Information Technology, Govt Polytechnic for Girls, Ahmedabad
- **Prof. Abhilasha S. Shrivastav**, Lecturer in Information Technology, Government Polytechnic for Girls, Ahmedabad

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- **Dr. D. Singh Karaulia**, Professor, Dept. of Computer Engg. and Applications
- **Dr. M. A. Rizvi**, Associate Professor, Dept. of Computer Engg. and Applications