



Level 6 Advanced Diploma in Programming (602)
163 Credits



Unit: Advanced Visual Basic .Net	Guided Learning Hours: 260
Exam Paper No.: 3	Number of Credits: 26
Prerequisites: Programming experience in VB .Net for at least six months.	Corequisites: A pass or higher in Diploma in Programming or equivalence.
<p>Aim: This hands-on unit examines how to utilise advanced features of the .NET framework using the VB.NET programming language in order to build sophisticated applications. The unit begins by quickly examining object-oriented programming topics, including inheritance, partial classes and generics. Learners learn about many of the .NET interfaces and how they can take advantage of them. Learner also learn how to manage data using .NET's object-based and generic collections. The unit also illustrates how to use LINQ to make queries of collections, objects, and DataSets.</p>	
Required Materials: Recommended Learning Resources.	Supplementary Materials: Lecture notes and tutor extra reading recommendations.
<p>Special Requirements: This is a hands-on unit, hence practical use of computers is essential. Requires intensive lab work outside of class time.</p>	
<p>Intended Learning Outcomes:</p> <ol style="list-style-type: none"> 1. How to build own classes and objects, initialise class objects and control access to members. 2. Collections, analyse TabIndex and TabStop properties, Access keys and the For Each ...Next repetition statement. 3. The graphics object and the mouse events, distinguish between right, left and middle mouse button. 4. Keyboard events objects describe a user interaction with the keyboard (keydown, enter and backspace), menus and dialogs. 	<p>Assessment Criteria:</p> <ol style="list-style-type: none"> 1.1 Describe how to create own classes 1.2 Demonstrate how to create and use objects of own classes 1.3 Describe how to control access to object instance variables 1.4 Demonstrate how to use keyword private 1.5 Define how to create own properties 1.6 Define the use of panel control 1.7 Describe how to use string methods padleft and substring. 2.1 Demonstrate how to create and manipulate an arraylist object 2.2 Demonstrate how set the tabstop and tabindex properties of a control 2.3 Describe how to create an access key for a control 2.4 Describe how to use a for <i>each...next</i> loop to iterate through an arraylist. 3.1 Demonstrate how to use mouse events to allow user interaction with an application 3.2 Identify how to handle mousedown, mouseup, and mousemove events 3.3 Explain how to use the graphics object to draw circles on the form 3.4 Define how to determine which mouse button was pressed. 4.1 Demonstrate how to handle keyboard events 4.2 Define how to create menus for windows applications 4.3 Define how to use dialogs to display messages 4.4 Define how to use the showdialog method for the font and color dialogs 4.5 Describe how to display the font dialog to enable users to choose fonts 4.6 Describe how to display the color dialog to enable users to choose colors.

<p>5. Processing strings, the fundamentals of strings and how to locate, extract and replacing substrings.</p>	<p>5.1 Demonstrate how to create and manipulate string objects 5.2 Describe how to use properties and methods of class string 5.3 Demonstrate how to search for substrings within strings 5.4 Describe how to extract substrings within strings 5.5 Describe how to replace substrings within strings</p>
<p>6. Programming database applications, how to connect to databases and how to read information from and update information in databases.</p>	<p>6.1 Demonstrate how to connect to databases 6.2 Create SQL statements 6.3 Describe query builder tool 6.4 Explain how to view the contents of an access database 6.5 Describe how add database controls to windows forms 6.6 Explain how to use the server explorer window 6.7 Demonstrate how to use the query builder dialog</p>
<p>7. Web servers, Internet Information Servers and the role played by Web and Application servers.</p>	<p>7.1 Describe how to use internet information services to serve web content to web browser clients 7.2 Define how to request documents from a web server 7.3 Describe how to execute an asp .net web application.</p>
<p>8. Understand web controls through practical implementation of web based application.</p>	<p>8.1 Create an ASP.Net web application 8.2 Design web forms 8.3 Describe web form controls 8.4 Use style attribute</p>
<p>9. Web Server controls; server-side scripting executed on a web server specifically designed to work with Web Forms pages.</p>	<p>9.1 Describe how to create an asp .net web application project. 9.2 Define how to create and design aspx pages 9.3 Describe how to use web form controls 9.4 Identify reposition controls, using the style attribute.</p>
<p>Methods of Evaluation: A 3-hour essay written paper with 5 questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake project/coursework in Advanced VB .Net Programming with a weighting of 100%.</p>	

Recommended Learning Resources: Advanced Visual Basic .Net

<p>Text Books</p>	<ul style="list-style-type: none"> Advanced Programming Using Visual Basic.Net with Student CD by Julia Case Bradley. ISBN-13 9780072254914 Advanced .NET Programming (Programmer to programmer) by Simon Robinson. ISBN-10: 1861006292
<p>Study Manuals</p> 	<p>BCE produced study packs</p>
<p>CD ROM</p> 	<p>Power-point slides</p>
<p>Software</p> 	<p>Visual Basic .Net</p>