12B1WCI734: C # AND VB.NET

Course Credit: 3
Semester: VII

Introduction

Fundamental programming concepts are presented together with supporting theoretical foundations and practical applications. This course emphasizes the practical application of techniques for writing and analyzing programs: data abstraction, program verification, and performance analysis. These techniques are applied in the design and analysis of fundamental algorithms and data structures.

The design and analysis of algorithms is the core subject matter of Computer Science. Given a problem, we want to (a) find an algorithm to solve the problem, (b) prove that the algorithm solves the problem correctly, (c) prove that we cannot solve the problem any faster, and (d) implement the algorithm. Designing an algorithm for a computational problem involves knowledge of the problem domain, a thorough knowledge of the data structures that are available and suitable and no small measure of creativity. This course concentrates on the above problems, studying useful algorithmic design techniques, and methods for analyzing algorithms.

Course Objectives (Post-conditions)

Knowledge objectives:

1. You will learn about MS.NET framework developed by microsoft.
2. You will be able to work on objects, namespaces in .NET
3. You will be able to use XML in VB.NET.
4. You will be able to locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
5. Students organize and process symbols, pictures, graphs, objects, and other information.
6. You will acquire the background for understanding MS.NET framework for any supporting languages.
7. You will be able to using XML in VB.NET specifically ADO.NET and SQL server
8. You will be able to understand use of   C# basics ,Objects and Types , Inheritance
9. You will learn about Web Services, Enterprise Services, Message Queuing, Future of distributed Programming, Interop

Application objectives:

1. to develop, implement and creating Applications with Visual Basic.
2. to develop, implement, and demonstrate Component Services, Threading , Remoting ,Windows services,web services,VB.NET and the internet.
3. to understand and be able to explain Security in the .NET framework and Deployment in the .NET.

4.to develop Assemblies and Deployment in .NET, Mobile Application Development, Visual Basic Compatibility Library .

Expected Student Background (Preconditions)

Basic knowledge of programming language (C/C++)
Topics Outline:

S NO	Topics	Hrs
1.	What is Microsoft .NET How it changes application development .	2
2.	Introduction VB.NET and VS.NET Features of VB.NET and VS.NET	2
3.	The Common Language Runtime CLR. Versioning and deployment, memory management,cross language integration, metadata and the IL Disassembler.	2
4.	Variables and Data Types	2
5.	Object Syntax Introduction Define Objects,classes,instances,encapsulation,abstraction,polymorphism,and Inheritance	2
6.	Objects and Components , Namespaces , Error Handling	2
7.	Using XML in VB.NET specifically ADO.NET and SQL server	2
8.	Data Access with ADO.NET object model in order to be able to build flexible, fast and scalable data access objects and applications.	2
9.	Windows forms - This chapter concentrating primarily on forms and built in controls.	2
10.	Creating windows controls- This chapter looks at creating our own windows controls .How to inherit from another control, build a composite control and write control from scratch based on the control class.	2
11.	Web Forms - This chapter explores Web forms and how you can benefit from their use. How .Net provides the power of Rapid Application Development for the development of web applications.	2
12.	Data Binding, Working with classic COM and Interfaces	2
13.	Component Services, Threading , Remoting ,Windows services,web services,VB.NET and the internet	2
14.	Security in the .NET framework and Deployment in the .NET	2
15.	Assemblies and Deployment in .NET, Mobile Application Development, Visual Basic Compatibility Library	2
16.	C# basics ,Objects and Types , Inheritance	2
17.	Operators and Casts , Delegates and Events	2
18.	Memory Management and Pointers	2

19.	Strings and Regular Expressions , Collections and Generics	2
20.	Reflection, Errors and Exceptions,Threading,Assemblies,.NET Security	2
21.	Localization, Deployment and Manipulating XML, Working with active directory	2
22.	Windows Applications , Viewing .NET data	2
23.	Web Services, Enterprise Services, Message Queuing, Future of distributed Programming, Interop	2
	Total	46

References

1. Professional   VB.NET   2003 by Bill Evjen,Billy Hollis,Rockford Lhotka, Wiley
2. Professional C# 2005 by Christian Nagel,Bill Evjen,Jay Glynn, Morgan Skinner, Wiley
Visual Basic .NET by Nell Dale, Michael McMillan ,Narosa

Evaluation Scheme:

S.No	Examination	Marks
1	T-1	15
2	T-2	25
3	T-3	35
4	*Internal Marks	25

*Internal Marks Breakdown:

Assignments   9 marks (3x3)

Quizzes   12 marks (3x4)

Regularity   4 Marks