20483 Programming in C#

COURSE OUTLINE

1 - REVIEW OF C# SYNTAX

Overview of Writing Applications using C# Datatypes, Operators, and Expressions C# Programming Language Constructs

Lab : Developing the Class Enrolment Application

2 - CREATING METHODS, HANDLING EXCEPTIONS, AND MONITORING APPLICATIONS

Creating and Invoking Methods Creating Overloaded Methods and Using Optional and Output Parameters Handling Exceptions Monitoring Applications

Lab : Extending the Class Enrolment Application Functionality

3 - DEVELOPING THE CODE FOR A GRAPHICAL APPLICATION

Implementing Structs and Enums Organizing Data into Collections Handling Events

Lab : Writing the Code for the Grades Prototype Application

4 - CREATING CLASSES AND IMPLEMENTING TYPE-SAFE COLLECTIONS

Creating Classes Defining and Implementing Interfaces Implementing Type-safe Collections

Lab : Adding Data Validation and Type-safety to the Grades Application

5 - CREATING A CLASS HIERARCHY BY USING INHERITANCE

Creating Class Hierarchies Extending .NET Framework Classes Creating Generic Types

Lab : Refactoring Common Functionality into the User Class

6 - READING AND WRITING LOCAL DATA

Reading and Writing Files Serializing and Deserializing Data Performing I/O Using Streams

Lab : Generating the Grades Report

7 - ACCESSING A DATABASE

Creating and Using Entity Data Models Querying Data by Using LINQ Updating Data by Using LINQ
Lab : Retrieving and Modifying Grade Data

8 - ACCESSING REMOTE DATA

Accessing Data Across the Web Accessing Data in the Cloud

Lab : Retrieving and Modifying Grade Data in the Cloud

9 - DESIGNING THE USER INTERFACE FOR A GRAPHICAL APPLICATION

Using XAML to Design a User Interface Binding Controls to Data Styling a User Interface

Lab : Customizing Student Photographs and Styling the Application

10 - IMPROVING APPLICATION PERFORMANCE AND RESPONSIVENESS

Implementing Multitasking by using Tasks and Lambda Expressions Performing Operations Asynchronously Synchronizing Concurrent Access to Data

Lab : Improving the Responsiveness and Performance of the Application

11 - INTEGRATING WITH UNMANAGED CODE

Creating and Using Dynamic Objects Managing the Lifetime of Objects and Controlling Unmanaged Resources

Lab : Upgrading the Grades Report

12 - CREATING REUSABLE TYPES AND ASSEMBLIES

Examining Object Metadata Creating and Using Custom Attributes Generating Managed Code Versioning, Signing and Deploying Assemblies

Lab : Specifying the Data to Include in the Grades Report

13 - ENCRYPTING AND DECRYPTING DATA

Implementing Symmetric Encryption Implementing Asymmetric Encryption

Lab : Encrypting and Decrypting Grades Reports