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## Software Development Fundamentals

**Duration: 3 Days    Course Code: M40361**

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### Overview:

This three-day MTA Training course helps you prepare for Microsoft Technology Associate Exam 98-361, and build an understanding of these topics: Core Programming, Object-Oriented Programming, General Software Development, Web Applications, Desktop Applications, and Databases. This course leverages the same content as found in the Microsoft Official Academic Course (MOAC) for this exam.

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### Target Audience:

The Microsoft Technology Associate (MTA) is Microsoft's newest suite of technology certification exams that validate fundamental knowledge needed to begin building a career using Microsoft technologies. This program provides an appropriate entry point to a future career in technology and assumes some hands-on experience or training but does not assume on-the-job experience.

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### Objectives:

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| ■ <b>After completing this course, students will be able to:</b> | ■ Understand Web Applications     |
| ■ Understand Core Programming                                    | ■ Understand Desktop Applications |
| ■ Understand Object-Oriented Programming                         | ■ Understand Databases            |
| ■ Understand General Software Development                        |                                   |
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## Content:

### Introduction to Programming

- Objective Domain Matrix
- Key Terms
- Understanding Computer Programming
- Introducing Algorithms
- Introducing C#
- Understanding Decision Structures
- The If Statement
- The If-Else Statement
- The Switch Statement
- Understanding Repetition Structures
- Understanding the While Loop
- Understanding the Do-While Loop
- Understanding the For Loop
- Understanding the Foreach Loop
- Understanding Recursion
- Understanding Exception Handling
- Handling Exceptions
- Using Try-Catch-Finally

### Introduction to Object-Oriented Programming

- Understanding Objects
- Thinking in an Object-Oriented Way
- Understanding Classes
- Understanding Values and References
- Understanding Structs
- Understanding Memory Allocation
- Understanding Encapsulation
- Understanding Access Modifiers
- Understanding Inheritance
- Understanding Abstract and Sealed Classes
- Inheriting from the Object Class
- Casting between Types
- Understanding Polymorphism
- Understanding the Override and New Keywords
- Understanding Interfaces

### Understanding General Software Development

- Understanding Application Lifecycle Management
- Understanding Requirements Analysis
- Understanding the Design Process
- Understanding Software Development
- Understanding Software Testing
- Understanding Release Management
- Understanding Testing
- Understanding Testing Methods
- Understanding Testing Levels
- Understanding Data Structures
- Understanding Arrays
- Understanding Queues
- Understanding Stacks
- Linked Lists
- Understanding Sorting Algorithms
- Understanding BubbleSort
- Understanding QuickSort

### Understanding Web Applications

- Understanding Web Page Development
- Understanding HTML
- Understanding Cascading Style Sheets
- Understanding JavaScript
- Understanding Client-Side vs. Server-Side Programming
- Understanding ASP.NET Application Development
- Understanding ASP.NET Page Life Cycle and Event Model
- Understanding State Management
- Understanding IIS Web Hosting
- Understanding Internet Information Services
- Creating Virtual Directories and Web Sites
- Deploying Web Applications
- Understanding Web Services Development
- Introducing SOAP
- Introducing WSDL
- Creating Web Services
- Consuming Web Services

### Understanding Desktop Applications

- Understanding Windows Forms Applications
- Designing a Windows Form
- Understanding the Windows Form Event Model
- Using Visual Inheritance
- Understanding Multiple Document Interface (MDI) Applications
- Understanding Console-Based Applications
- Working with Command-Line Parameters
- Understanding Windows Services
- Creating a Windows Service

### Understanding Databases

- Understanding Relational Database Concepts
- Understanding Databases
- Understanding Relational Database Concepts
- Understanding Relational Database Design
- Understanding Entity-Relationship Diagrams
- Understanding Data Normalization
- Understanding Database Query Methods
- Working with SQL Queries
- Working with Stored Procedures
- Understanding Database Connection Methods
- Working with Flat Files
- Working with XML
- Working with DataSet

## Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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