



Diploma in Microsoft Technologies [1 Year]

Course Guide

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One Year Program Course Contents

Trimester - 1

Windows Operating System

- Understanding operating system configurations
- Installing and upgrading client systems
- Managing applications
- Managing files and folders
- Managing devices
- Understanding operating system maintenance

Microsoft Office

Ms Word

- Getting Started with Microsoft Word
- Editing a Document
- Formatting Text
- Formatting Paragraphs
- Working with Tables
- Header and Footer
- Drawing Toolbar – Word Art
- Create Word Macros
- Proofing a Document

Ms Excel

- Concepts of MS Excel
- Formulas and Functions
- Editing Features
- Working with the Large Workbooks
- Inserting page breaks for printing-
- Working with Charts
- Inserting Graphic Objects
- Previewing and Printing
- Simple Database Operation
- Analyzing Data Using Pivot Tables and Pivot Charts

Ms Powerpoint

- Getting Started
- Creating a Presentation
- Working with Content
- Formatting Text
- Adding Content
- Graphics
- Tables
- Charts
- Slide Effects
- Printing
- Package a Presentation

Image Editing

Corel Draw

- Introduction to COREL DRAW X5
- Drawing shapes
- Creating custom shapes
- Colors + Fills, Filling objects
- Outlines
- Working with artistic & paragraph text
- Shaping objects
- Working with bitmaps
- Using the interactive tools

Adobe Photoshop

- Introduction to Adobe Photoshop CS6
- Rulers, guides and grids Layers
- Layers Styles
- Transformation
- Working with Text
- Image
- Color adjustment
- 'Quality' adjustment
- Selections
- Outputting for the Web

Adobe Illustrator

- What is Illustrator?
- Working with Documents
- Selecting and Transforming Objects
- Distorting and transforming objects
- Working with Color, Fills and Strokes
- Working with Paths
- Creating Shapes
- Pen Tool
- Using Type in Illustrator
- Working with Layers
- Drawing in Perspective
- Printing, Saving, and Exporting

Trimester - 2

MTA – Web Development

HTML

- Fundamentals of HTML
- Basic HTML tags
- Format text on Web Pages
- Incorporate images
- Create hyperlinks

- Create complex image maps
- Create tables and nested tables
- Insert a form on a web page
- Set, modify form field properties: text field, drop-down, check box, radio button
- Validating HTML

Cascading Style Sheet - CSS

- Designing with Style Sheets
- Style Sheet Syntax
- ID, Class Contextual Selectors
- Linked (External) Style Sheets
- Cascading Order
- Properties: Text, Font, Colors, Backgrounds, Borders
- Floating Elements
- Absolute and Relative Positioning i.e. Div's etc.
- Layering Elements with the Z-Index
- Animation of objects

JavaScript & Document Object Model - DOM

- Introduction to JavaScript
- Variables and Objects
- Decision Making Statement: If, Switch
- Loops: For, While & Do While
- Arrays
- Functions and Prototypes
- Core JavaScript Objects
- DOM Introduction
- DOM Event Model
- DOM Functions i.e. Document.Write, Document.getElementById, Document.bgColor etc.

JQuery

- Introduction
- Install & Configuration
- jQuery Syntax
- Selectors
- Events: Hide/Show, Fade, Slide, Animate, Stop, CSS
- jQuery Callback
- jQuery Chaining

Networking Core Concepts & CCNA

- Understanding network infrastructures
- Understand the concepts of Internet, intranet, and extranet
- Virtual Private Network (VPN), security zones, firewalls
- Understand local & wide area networks (LANs/WANs)
- Understand wireless networking & its standards
- Understand network topologies and access methods
- Understanding network hardware

- Understanding protocols and services
- CCNA Certification Official Curriculum

Software Development – I [Java]

- Introduction
- Language Components
- Object-Oriented Programming
- Methods
- Arrays
- Encapsulation
- Inheritance & Polymorphism
- Abstract Classes and Interfaces
- Exceptions
- Input and Output in Java
- Threads
- Java Applets
- Java Graphics

Trimester - 3

Database Management System SQL Server

- Introduction to Microsoft SQL Server
- Introduction to T-SQL Querying
- Writing SELECT Queries
- Querying Multiple Tables
- Sorting and Filtering Data
- Working with SQL Server 2014 Data Types
- Using DML to Modify Data
- Using Built-In Functions
- Grouping and Aggregating Data
- Using Subqueries
- Using Table Expressions
- Using Set Operators
- Using Window Ranking, Offset, and Aggregate Functions
- Pivoting and Grouping Sets
- Executing Stored Procedures
- Programming with T-SQL
- Implementing Error Handling
- Implementing Transactions
- Improving Query Performance
- Querying SQL Server Metadata

Web Development

PHP HyperText PreProcessor - PHP

- Introduction
- PHP Document

- Language Fundamentals: Variables, Constants
- Decision Making Statement: If, ? & Switch
- Loops: For, For-Each While & Do While
- Statement: Break, Continue
- Operators: Airthmentic, String, Assignment, Comparison, Incr/Decr etc.
- PHP functions:
- Arrays: Numerically Indexed, Associative
- Array Functions: Join, Explode, Implode, In_Array, Array_Search.
- String Functions: Strlen, Printf, Substr, Str_Replace
- Server-Side Processing
- Processing Forms via GET/POST
- GET or POST?
- State and Persistence: Cookies/Session
- Web Application Development
- Introduction to PHP Frameworks
- Basic OOP

Integrating PHP and MySQL

- PHP interfacing with MySQL
- Connecting to MySQL
- Connecting to a database
- Executing SQL
- Retrieving the data set
- Refining the fetch

Administering Windows Server

Deploy, Manage, and Maintain Servers

- Deploy and manage server images.
- Implement patch management.
- Monitor servers.

Configure File and Print Services

- Configure Distributed File System (DFS).
- Configure File Server Resource Manager (FSRM).
- Configure file and disk encryption.
- Configure advanced audit policies.

Configure Network Services and Access

- Configure DNS zones & DNS records.
- Configure VPN and routing.
- Configure DirectAccess.

Configure a Network Policy Server Infrastructure

- Configure Network Policy Server (NPS).
- Configure NPS policies.
- Configure Network Access Protection (NAP).

Configure and Manage Active Directory

- Configure service authentication.

- Configure Domain Controllers.
- Maintain Active Directory.
- Configure account policies.

Configure and Manage Group Policy

- Configure Group Policy processing.
- Configure Group Policy settings.
- Manage Group Policy objects (GPOs).
- Configure Group Policy preferences

Trimester – 4

Microsoft Certified Solutions Expert - Networking

- Installing and Configuring Windows Server
- Administering Windows Server
- Configuring Advanced Windows Server Services
- Designing and Implementing a Server Infrastructure
- Implementing an Advanced Server Infrastructure

Software Development – II [C# Sharp] Getting Started

- Installing Visual Studio
- Creating a console application

Language Fundamentals

- Everything is an object
- Understanding C# syntax
- Identifier naming conventions
- Using the documentation

Declaring Variables

- Using built-in data types
- Declaring variables
- Working with characters, Strings
- Building strings with StringBuilder
- Parsing strings as numbers
- Using mathematical operators
- Working with Boolean values and expressions
- Using constants and enumerations
- Working with dates and times
- Using simple arrays

Managing Application Flow

- Getting input in a console application
- Evaluating conditions with if and else
- Evaluating conditions with switch statements

- Looping with for, while, do-while & foreach statements
- Creating reusable code with methods
- Managing variable visibility and scope
- Managing flow with break and continue
- Challenge: Building a simple calculator application
- Solution: Building a simple calculator application

Exception Handling and Debugging

- Understanding runtime exceptions
- Debugging exceptions in your code
- Handling exceptions with try/catch
- Using multiple catch statements
- Cleaning up with finally

Creating Custom Classes

- Defining a class with static methods
- Representing data with plain-old class objects
- Declaring private fields and public properties
- Declaring properties with shorthand get and set methods
- Overriding the ToString() method
- Adding multiple constructor methods
- Organizing classes with namespaces

Working with Inheritance and Polymorphism

- Extending a class to create a new class
- Overriding and calling base class methods
- Creating methods that accept sub-classed objects

Choose One:

ASP.NET or Android App Development

ASP.NET Web Applications

Overview of .NET & Web Technologies

- Overview of Microsoft Web Technologies
- Overview of ASP.NET
- Introduction to ASP.NET MVC

Designing ASP.NET MVC Web Applications

- Planning in the Project Design Phase
- Designing Models, Controllers, and Views

Developing ASP.NET MVC Models

- Creating MVC Models
- Working with Data

Developing ASP.NET MVC Controllers

- Writing Controllers and Actions, Action Filters
- Add Controllers to an MVC Application to manage user interaction, update models, and select and return Views.

Developing ASP.NET MVC Views

- Creating Views with Razor Syntax
- Using HTML Helpers

- Reusing Code in Views

Testing and Debugging ASP.NET MVC Web Applications

- Unit Testing MVC Components
- Implementing an Exception Handling Strategy

Structuring ASP.NET MVC Web Applications

- Analyzing Information Architecture
- Configuring Routes
- Creating a Navigation Structure

Applying Styles to ASP.NET MVC Web Applications

- Using Template Views
- Applying CSS to an MVC Application
- Creating an Adaptive User Interface

Building Responsive Pages in ASP.NET MVC Web Applications

- Using AJAX and Partial Page Updates
- Implementing a Caching Strategy

Using JavaScript and jQuery for Responsive MVC Web Applications

- Rendering and Executing JavaScript Code
- Using jQuery and jQuery UI

Controlling Access to ASP.NET MVC Web Applications

- Implementing Authentication and Authorization

Building a Resilient ASP.NET MVC Web Application

- Developing Secure Sites
- State Management

Implementing Web APIs in ASP.NET MVC Web Applications

- Developing a Web API
- Calling a Web API from Mobile and Web Applications

Deploying ASP.NET MVC Web Applications

- Deploying a Web Application or MVC Application

Android App Development

Getting Started:

- Android Studio Installation

The Basics

- What is Android?
- Architecture Explained
- Role of Java
- Hello World Application

Unit Testing and Debugging

- Creating Unit Tests
- Android Development Tools (ADT)
- Using the Emulator
- Analyzing the Heap

Android User Interface

- View Hierarchy, Menus
- Fragments

Styling Widgets

- Defining & Applying Styles to the UI
- Platform Styles and Themes

Layout

- Layout Containers
- Weight and Gravity
- Layout Techniques
- Handling Events

Advanced Widgets

- ScrollView, ViewPager
- TabView, Custom Views

Storing and Retrieving Data

- Internal and External Storage
- Preferences

Content Providers

- Querying Content Providers
- Modifying Data
- Creating a Content Provider

Asynchronous Tasks

- Main UI Thread
- Using AsyncTask

Location Services and Maps

- Location Services
- Mock Location Data
- Google Map Libraries

Web View

- Web Apps Overview
- Targeting Screens from Web Apps
- Web View
- Debugging Web Apps
- Best Practices for Web Apps

Best Practices

- Compatibility
- Supporting multiple screens
- Optimizing for Other Android Versions