## Course Name: ASP.NET 2019-MVC

**Module 1:**

1. **INTRODUCING NET Platform (Class 1)**

* Explore NET Framework 4.6.1
* Introduce IDE
* Understand Common Language Runtime (CLR)
* Understand the role of CTS and CLS
* Learn about Base Class Libraries
* Introduce IIS
* Difference between Managed Code and Unmanaged Code
* Start exploring IDE-Visual Studio 2015

1. **Core C# Programming**

* Working with Console Class (Input and Output)
* Learn how to create C# Data Type and Variable
* Learn about Data Type Conversions
* Working with Operators
* Creating Conditional and Looping Constructs
* Working with Arrays and Array functions
* Implementing Methods and Parameters
* See how to use Named and Optional Parameters
* Explain the Difference between Value Types and Reference Types
* Learn how to implement String Handling

1. **Object Oriented Programming**

* Creating Class and Object
* Explore OOP Features with examples
* Working with Constructor and Destructor
* Learn about Modifiers and Access Specifies
* Learn how to use Abstract Class and Interface
* Developing Namespaces and Assemblies
* Using Exception Handling
* Working with File I/O Operations

1. **C# Advanced Features**

* Working with Delegates and Events
* Creating Collections and Generics
* Learn about Language Integrated Query (LINQ)
* Create Private and Shared Assemblies
* Explore Dynamic Types and DLR
* Creating Processes and AppDomains
* Threading and Multi-Threaded Application
* Create and Implement Object Serialization

**Module II:**

1. **ASP.NET Web Application Development (Class 2)**

* Understand Web Application Fundamentals
* Creating Standard Web Controls and Events
* Working with Navigation Controls
* Working with Rich Server Controls
* Working with Validation controls
* Create Web User Control

1. **Introduction to Microsoft SQL Server 2012**

* Introducing Microsoft SQL Server 2012
* Getting Started with SQL Server Management Studio

**Writing SELECT Queries**

* Writing Simple SELECT Statements
* Eliminating duplicates using DISTINCT
* Using Column and Table Aliases
* Writing Simple CASE Expressions

**Querying Multiple Tables (Class 3)**

* Understanding Joins
* Querying with Inner Joins
* Querying with Outer Joins
* Querying with Cross Joins and Self Joins

**Sorting and Filtering Data**

* Sorting Data
* Filtering Data with a WHERE Clause
* Filtering with the TOP and OFFSET-FETCH Options
* Working with Unknown and Missing Values

**Working with SQL Server 2012 Data Types**

* Introducing SQL Server 2012 Data Types
* Working with Character Data
* Working with Date and Time Data

**Using Built-In Functions.**

* Writing Queries with Built-In Functions
* Using Conversion Functions
* Using Logical Functions
* Using Functions to Work with NULL

**Grouping and Aggregating Data**

* Using Aggregate Functions
* Using the GROUP BY Clause
* Filtering Groups with HAVING

**Using Sub queries**

* Writing Self-Contained Sub queries
* Writing Correlated Subqueries
* Using the EXISTS Predicate with Subqueries

**Using Table Expressions.**

* Using Derived Tables
* Using Common Table Expressions
* Using Views
* Using Inline Table-Valued Functions

**Using Set Operators**

* Writing Queries with the UNION Operator
* Using EXCEPT and INTERSECT
* Using APPLY

**Using Window Ranking, Offset and Aggregate Functions**

* Creating Windows with OVER
* Exploring Window Functions

**Executing Stored Procedures**

* Querying Data with Stored Procedures
* Passing Parameters to Stored Procedures
* Creating Simple Stored Procedures
* Working with Dynamic SQL

**Implementing Error Handling**

* Using TRY / CATCH Blocks
* Working with Error Information

**Implementing Transactions**

* Transactions and the Database Engine
* Controlling Transactions

**Improving Query Performance**

* Factors in Query Performance
* Displaying Query Performance Data

1. **TIER ARCHITECTURE (Class 4,5,6)**

* Single Tier
* Two Tier
* Three Tier
* MVC

1. **HTML 5 (Class 7: Before starting MVC)**

* Describe HTML 5
* Creating <canvas> element for 2D drawing
* Creating <video> and <audio> elements for media playback
* Implement content-specific elements <article>, <footer>, <header>, <nav>,
* <section>
* Working with controls- calendar, date, time, email,

Working with New Form Elements

1. **JavaScript**

* Define JavaScript
* Create and Manipulate Variables
* Implement Functions
* Learn how to use JavaScript Events
* Developing Popup Boxes
* Learn how to use Client-Side Validation

1. **CSS3 (Class 8)**

* Define CSS3
* Create Selectors
* Use Box Model
* Implement Backgrounds and Borders
* Use Text Effects
* Learn how to use 2D/3D Transformations
* Implementing Animations
* Working with Multiple Columns
* Explore User Interface

1. **AJAX and jQuery (Class 9)**

* Working with Ajax Controls
* Explore Ajax Control Tool Kit
* Understand Ajax Web Form
* Extenders
* Introduction to jQuery
* **JSON**
* Introduction to JSON

1. **MVC4.5 (Class 10 to 15)**

* Creating MVC Models
* Creating a Data Repository
* Implementing MVC Controllers
* Implementing MVC Views

1. **Authentication and Authorization**

* Explain about Authentication and Authorization
* Describe Anonymous Authentication
* Understand Windows Authentication
* Learn how to use Forms Authentication
* Implement jQuery in Web Application

1. **Language Integrated Query**

* Working with LINQ to Dataset.
* Working with LINQ to SQL.
* Working with LINQ to XML

1. **Using Entity Framework**

* Generating and Querying an Entity Data Model (EDM).
* Querying data using object Services
* Customizing the Entity Data Model

1. **Handling Emails**

* Describe Protocols for Email
* Learn how to send Mail using ASP.NET
* Managing Attachments

1. **. Exception handling**

* Introduction
* Types of exceptions
* Handling exceptions
* Try
* Catch

1. **Validation**

* Introduction
* Types of Validation
* Regular Expression validator
* Required validator
* Compare validator
* Range validator

1. **Uploading and Downloading Files**
2. **Project: -Shopping cart**

**Module III:**

1. **WCF**

* WCF Essentials
* Address, Binding and Contract
* WCF Services and Clients
* WCF Service Libraries
* WCF Test Host and Test Client

**REACT(15-20)**

1. Introduction
2. React Components
3. React State and Props
4. React Event Handling

**Angular**

1. Angular Js
2. Modules and Components
3. Databinding in Angular js
4. Directives in Angular js
5. Dependency Injection in Angular js
6. Routing
7. Forms
8. Pipes
9. Authentication
10. HTTP Requests

**REST API**

We will cover the entire functions based on GET ,POST, DELETE methods.

**NODEJS**

* 1. Download & Install Node.js
  2. Node.js Modules: Create, Publish, Extend & Manage
  3. Node.js Http : Create Server and Get Data
  4. Node.js Express
  5. Node.js MongoDB
  6. Node.js Promise