

Course : Fundamentals of Programming
Duration : 126 hrs

Module 1:

Programming Principles and Techniques

- Introduction to Computers
- Introduction to Programming Tools
- Flowcharts and Pseudocodes
- Selection Constructs
- Operators
- Iteration Constructs
- Structured Programming
- Arrays
- File Handling
- Data Flow Diagrams
- Elements of Programming Language

Module 2:

Logic Building and Elementary Programming

- Basics of C
- Variables and Data Types
- Operators and Expressions
- Input and Output in 'C'
- Condition
- Loop
- Arrays
- Pointers
- Functions
- Strings
- Advanced Data types and Sorting
- File Handling

Module 3:

Building Next Generation Web Sites using HTML5, CSS3 and JavaScript

- Introduction to the Web
- Introduction to HTML5
- Formatting Text Using Tags
- Creating Hyperlinks and Anchors
- Introduction to CSS3
- Formatting using Style Sheets
- Displaying Graphics and CSS3 Animation
- Creating Navigational aids and Division-Based Layout
- Creating Tables
- HTML Forms
- HTML5 Audio and Video
- Introduction to JavaScript
- Operators and Statements
- Loops and Arrays
- Functions and Objects
- Building a Mobile Web Application
- Canvas and JavaScript
- HTML5 Web Storage
- HTML5 Geolocation and APIs

Module 4:

Bootstrap and JQuery

- Basics of Bootstrap
- Understanding Programming in Bootstrap
- Basics of jQuery
- Functions, widgets, plugins in jQuery
- Creating Bootstrap Responsive layout
- Creating Responsive Webpages using Bootstrap and jQuery

Module 5: AngularJS

- Understanding AngularJS and its Uses
- Controllers, Expressions, Sharing Data, and Two Way Data Binding
- Directives, Filters, and Routes
- Custom Directives, Scope, and Services
- Form Validation and AngularJS Animations
- Services and Communication in AngularJS
- Building Single Page Applications in AngularJS

Module 6: Data Management (SQL Server)

- RDBMS Concepts
- Entity-Relationship (E-R) Model and Normalization
- Introduction to SQL Server 2012
- SQL Azure
- Transact-SQL
- Creating and Managing Databases
- Creating Tables
- Accessing Data
- Advanced Queries and Joins
- Using Views, Stored Procedures, and Querying Metadata
- Indexes
- Triggers
- Programming Transact-SQL
- Transactions
- Error Handling
- Introduction to SQL Server 2016
- New Features of SQL Server 2016
- Enhancements in SQL Server 2016
- Security Upgrades and Working with JSON
- PolyBase, Query Store, and Stretch Database
- Improved Performance Tools and Transact-SQL Enhancements