

Schedule																				
Months	1				2				3				4				5			
Weeks																				
C#, Data Structures	[Orange]																			
SQL, SQL Server													[Blue]							
ADO.net															[Yellow]					
Entity Framework																			[Dark Blue]	
HTML/CSS/JavaScript													[Green]	[Green]	[Green]	[Green]				
ASP.net MVC																			[Red]	[Red]
Development																			[Blue]	[Blue]
Information Load Index																				

Backend Programming

C# and .NET Framework

Fundamentals

1. System Data Types
2. Value and Reference types, Nullable types
3. String, Immutable types, String Builder
4. Arrays, Enum
5. Iteration constructs
6. Decision constructs
7. Methods and parameter modifiers
8. Methods overloading, default parameter

OOP Programming

1. class, constructor, memory allocation
2. this keyword
3. Encapsulation
4. Access modifiers
5. Properties, getter and setter
6. static keyword
7. readonly and const keywords
8. Exception Handling
9. Nested types
10. Inheritance
11. Polymorphism
12. virtual and override keywords
13. Object, Boxing and Unboxing
14. Abstract class
15. Interface

1. Operator Overloading, Indexer Methods, Extension Methods
2. Generic Programming
3. Reflection, Attributes
4. IEnumerable and IEnumerator Interfaces
5. Delegates, Events, Lambda Expressions
6. LINQ fundamentals
7. IDisposable Pattern, GC
8. Threading fundamentals
9. TPL, async, await

Algorithms and Data Structures

1. Measuring Performance
2. Linked List
3. Stack
4. Queue
5. Binary Trees
6. Hash Tables
7. Sorting Algorithms
8. Set Collection and Algorithms

T-SQL and SQL Server

1. Background to T-SQL Querying and Programming
2. Single-Table Queries
3. Joins
4. Subqueries
5. Table Expressions
6. Set Operators
7. Data Modification

ADO.NET

1. Commands
2. Data Reader
3. Data Set
4. Transactions

Entity Framework

5. EF Mapping
6. EF Entities
7. Data Context
8. EF Database First
9. EF Code First

Around 20 weeks, 6 hours per week

Frontend Programming

HTML, CSS

JavaScript, JQuery

Full Stack Programming

ASP.NET Core

1. MVC Pattern
2. Routes and URLs
3. Controllers and Actions
4. Views, Layouts, HTML Helpers and Data Validation
5. Data Access Layer
6. Middleware
7. Authentication and Authorization
8. Configuration files and security

Development and collaboration

1. Agile development principles
2. Unit Testing
3. Visual Studio Team Services
4. GitHub

Projects (TBD)

Around 7-8 weeks, 4-6 hours per week (can be parallel to first part)
