	Subject	Date	Time
1	**Basics of C# Programming**		
1.1	C# language and .NET platform	3.01.24	18:00
1.2	Variables		
1.3	Data types		
1.4	Static variables and constants		
1.5	Working with the console application		
1.6	Arrays		
1.7	C# arithmetic/comparison operations		
1.8	If else and Switch case constructions		
1.9	Loops (For, Foreach, While, Do-while)	4.01.24	18:00
1.10	Methods		
1.11	Method with params parameter		
1.12	Ref and Out keywords in methods		
1.13	Local and recursive function		
1.14	Tuple and Enum		
2	**Classes, structures and namespaces**		
2.1	Classes and objects	9.01.24	18:00
2.2	Constructors, initializer, and destructors		
2.3	Fields and properties		
2.4	Method and static method in class		
2.5	Structures		
2.6	Record type		
2.7	Namespace and global namespace		
2.8	Partial and extended classes	11.01.24	18:00
2.9	Value types and reference types		
2.10	Nullability in value types and reference types		
2.11	Accessibility of the class and class members		
3	Improve searching and designing knowledges		
3.1	How to search/find what you need?		
3.2	How to use AI chats correctly?		
3.3	Select a project to atomize your organization		

4	**Delegates, Events, and Lambdas**	16.01.24	18:00
4.1	Delegates and using of that		
4.2	Action and Func Delegates		
4.3	Anonymous Methods		
4.4	Lambdas		
4.5	Events		
5	**Object-Oriented Programming (OOP)**		
5.1	What is OOP and its concepts in C#?	18.01.24	18:00
5.2	Inheritance		
5.3	Abstract Classes		
5.4	Read-only Properties in a Class		
5.5	Virtual Methods and Properties		
5.6	Hiding, Overriding, and Abstract Methods	23.01.24	18:00
5.7	Interfaces		
5.8	Interface Inheritance		
5.9	Generic Classes	25.01.24	18:00
5.10	Generic Methods		
5.11	Generic Properties		
6	**Collections and LINQ queries**		
6.1	List<T>	30.01.24	18:00
6.2	Dictionary<Tkey, Tvalue>		
6.3	ConcurrencyDictionary<Tkey, Tvalue>		
6.4	Span<T>		
6.5	Queue<T>		
6.6	Stack<T>		
6.7	HashSet<T>		
6.8	IEnumerable<T> and IQueryable<T>		
6.9	LINQ-queries	1.02.24	18:00
	Exam 1		
7	**Multithreading**		

7.1	Introduction		
7.2	Running Code Simultaneously		
7.3	Processes		
7.4	Threads		
8	**Parallelism**		
8.1	Introduction		
8.2	Difference Between Concurrency and Parallelism		
8.3	Launching a New Thread		
9	**Asynchronous and Synchronous**		
9.1	Introduction		
9.2	Difference Between Concurrency, Parallelism, and Asynchrony		
9.3	Async/await methods		
10	**Concurrency**		
10.1	Introduction		
10.2	Difference Between Concurrency and Multithreading		
10.3	Avoid of concurrency issue		
11	**Memory Management in .NET**		
11.1	Value and reference types		
11.2	Stack and Heap		
11.3	Mutable and Immutable classes		
11.4	Boxing and Unboxing		
11.5	Garbage collector		
11.6	Small/Large Object Heap		
11.7	Managed and unmanaged code		
11.8	Dispose Pattern		
11.9	Finalizer		
12	**SOLID**		
12.1	Single Responsibility Principle		
12.2	Open-closed Principle		

12.3	Liskov substitution Principle		
12.4	Interface Segregation Principle		
12.5	Dependency Inversion Principle		
13	**Design patterns**		
13.1	Introduction		
13.2	Pattern Types		
13.3	Creational patterns		
13.4	Structural patterns		
13.5	Behavioral patterns		
13.6	Repository, Strategy, Dependency Injection pattern		
	Exam 2		
14	**ASP.NET Core**		
14.1	Introduction to ASP.NET Core		
14.2	Rules for creating routes		
14.3	Logging in ASP.NET Core		
15	**REST and API**		
15.1	Introduction to REST		
15.2	Basic principles		
15.3	Http methods and responses		
16	**Entity Framework Core (ORM)**		
16.1	Entity Framework Core		
16.2	Using Entity Framework Core in ASP.NET Core		
16.3	Modeling and creating tables		
16.4	Creating relationships between tables		
16.5	CRUD with Entity Framework Core		
16.6	Repository pattern for CRUD operation		
16.7	Approaches for obtaining data: Eager, Lazy loading		
16.8	Migration management		

17	**Dependency injection (DI)**		
17.1	Introduction		
17.2	Dependency Lifecycle		
17.3	Service provider		
17.4	Creating your own services		
18	**Middlewares**		
18.1	Introduction		
18.2	Creating a simple Middleware		
19	**Authorization and authentication**		
19.1	Introduction		
19.2	Authorization and authentication methods		
19.3	Authorization and Authentication in REST		
19.4	Adding Authentication to ASP.NET Core (Bearer)		
19.5	Adding Authorization in ASP.NET Core		
19.6	JWT tokens		
19.7	Role of JWT in REST		
19.8	Header, Payload, Signature in JWT		
19.9	Creating a server for generating JWT tokens		
20	**Data Validation in ASP.NET Core**		
20.1	Introduction		
20.2	Creating services for validation		
20.3	Using the FluentValidation framework		
21	**Request and Response**		
21.1	Data transfer object (DTO)		
21.2	Using record		
21.3	Using the AutoMapper framework		
22	**MediatR and CQRS**		
22.1	Introduction		
22.2	ASP.NET Core: Request Handling		

23	**Test Driven Development Methodology**		
23.1	Creating a Project Using TDD		
23.2	TDD principles		
23.3	Practice: Creating a simple calculator using TDD		
24	**Unit testing**		
24.1	Using the NUnit framework		
24.2	Using the xUnit framework		
24.3	Mock testing		
24.4	Mocking using Moq		
24.5	Mocking using NSubstitute		
25	**Integration tests**		
25.1	Working with WebApplicationBuilderFactory		
25.2	Creating an HttpClient from a WebApplicationBuilderFactory		
25.3	EF Core configuration under different test environments		
25.4	Using services from WebApplicationBuilderFactory		
26	**Blazor**		
26.1	Introduction		
26.2	Blazor Web Assembly and Server		
26.3	Razor pages		
26.4	Create your first Blazor Web Assembly project		
27	**Blazor pages and templates**		
27.1	Creating pages and specifying the address		
27.2	Creating and applying a template		
27.3	Writing C# code inside a page		
28	**Blazor Authentication and Authorization**		
28.1	Introduction		
28.2	Creating a CustomAuthStateProvider		
28.3	Saving the token in local storage		

28.4	Authorization in pages		
29	**Blazor CRUD**		
29.1	Creating Pages and Project Templates		
29.2	Using TabBlazor		
29.3	Execution of CRUD warehouses		
30	DevOps – project publication		
30.1	Introducing Azure		
30.2	Creating resources on Azure		
30.3	Create Azure Key Vault		
30.4	Creating a Resource API		
30.5	Creating SQL Server and Database		
30.6	Creating a Blazor Static Web App		
30.7	Creating a CI-CD for publishing		
	Preparing for the Demo		