Mean Stack (Angular, NodeJs, ExpressJs and MongoDb) - Syllabus

Sl. no	Topic	Hrs
1	**Module 1: Web Development**	
2	**Module 2: Html, Css, Bootstrap**	
3	**Module 3: Javascript, Typescript**	
4	**Module 4: Angular**	
5	**Module 5: NodeJs, ExpressJs**	
6	**Module 6: MongoDb**	
7	**Module 7: Project Implementation of Mean Stack**	
1	**Module 1: Web Development**	
	What is Web Development, What is Mean Stack	
	Github	
2	**Module 2: Html, Css and Bootstrap**	
	Html	
	Introduction to Html	
	Html Elements, Attributes	
	Page Creation with Formatting Elements	
	Creating Links and Navigating, Redirecting Pages	
	Displaying the Images, Adjustment of Images along with Content	
	Organizing data with Tables	
	Displaying data in Listings	
	Creating Forms and Layouts with Fields and Input	

	Implementing the Semantic Elements (latest Html elements)	
	Working with Audio and Video (Media Objects)	
	Css	
	Introduction to Css	
	Implementing the Three Different ways of Styles: Inline, Embedded and External to Html Content	
	Applying the Web Colors to Html Content in Three Different ways: Direct Name, Numerical, and HexaDecimal	
	Applying different properties like: padding, margin, float, font, border, background, etc.,	
	Applying the Display and Position properties, etc.,	
	Creating the Web Page with Content	
	Creating the Grid Layout with Sample Content with Responsive	
	Working with Media Queries	
	Bootstrap	
	Introduction to Bootstrap, Usage, Advantages	
	Discussing about different types of Resolutions	
	Implementing the Bootstrap Required Links into Web Pages	
	Create the Fixed Width, Fluid Width Web Pages	
	Implementing the Components of Bootstrap:	
	Tables, Lists, Forms, Images,	
	Modals, Tabs, Cards, Navigations	
3	**Module 3: Javascript and Typescript**	
	Javascript	

	Introduction about Javascript, DOM etc?	
	Writing the Programs and Displaying the Data	
	Understanding about Keywords, Identifiers	
	Declarations: var, let, const	
	Implementing Statements: Decision Making Statements and Loop Statements	
	Working with Arrays and Implementing with Examples	
	Understanding the Concept of Functions: Call and Define, Functions with Parameters, Return Statement, Arrow Functions, Call Back Functions	
	Implementing the Object Oriented Programming in Javascript: What is Object, Class, Constructor, Method, Property etc., and its terminology	
	Creating the concept with Class and Object includes the Methods, Properties, and Accessing the Data	
	Proptotype, Closures concepts implementation	
	Promise, and Async and Await concepts implementation	
	Typescript	
	Typescript Introduction, Advantages of Typescript	
	Declaring Variables or Identifiers using let & const and accessing them	
	Working with Decision Making Statements	
	Working with Loop Statements	
	Working with Functions	
	Understanding and Implementing Tuple Operators	
	Creating Interfaces, accessing with Objects	

	Creating Classes, Interfaces and Declaring Objects	
	Implementing Inheritance	
	Creating Custom Modules	
4	**Angular**	
	Introduction to Angular, Features, Advantages, Single Page Application	
	Setting up the Env., and Creating the Angular Project	
	Understanding the Angular Project Flow, Precising the Folder Structure	
	Creating the Components through Command or Manual and Connecting to Project	
	Adding additional Dependencies through NPM, Installing or Updating or Deleting the Packages or Dependencies according to Project Requirements	
	Creating the Routing Concept with Group of Components	
	Working with Property Binding, Event Binding	
	Property Binding with One Way & Two Way	
	Implementing the Two Way Property Binding with Forms	
	Creating the Forms with Template Driven and Implementing Form Validations with Regular Expressions using Pattern	
	Creating the Forms with Reactive Forms and Implementing Form Validation with Regular Expressions using Pattern	
	Creating the Form with File Upload with Validation	
	Creating the Form with Adding Dynamic Elements on Fly Based on the User Actions	
	Understanding the concept of Services, Creating the Services,	

	and accessing the Services into Components	
	Implementing the concept of Observables	
	Implementing the concept of Dependency Injection	
	Understanding the concepts of @Input() and @Output() Decorators and Implementation	
	Understanding and Implementing the concept of Directives	
	Working with Built-in Directives, Creating the Custom Directives	
	Understanding and Implementing the concept of Pipes	
	Working with Built-in Pipes and Creating the Custom Pipes	
	Implementing the CRUD Operations	
	Implementing the concept of Lazy Loading	
	Implementing the concept of Life Cycle Hooks	
	Creating the Custom Modules and Implementing into the Components	
	Creating the Single Page Application	
5	**NodeJs and ExpressJS**	
	NodeJs	
	Introduction to NodeJs	
	What is NodeJs? Advantages of NodeJs	
	Traditional Web Server Model	
	NodeJs Process Model	
	Setup Dev., Environment	
	Install NodeJs on Windows, Mac and Linux	
	Working with REPL	

	NodeJs Console	
	NodeJs Modules	
	Functions	
	Buffer	
	Modules	
	Module Types	
	Core Modules	
	Local Modules	
	Module.exports	
	Node Package Manager	
	What is NPM?	
	Installing Packages Locally	
	Adding Dependency in package.json	
	Installing packages globally	
	Updating packages	
	Creating Web Server	
	Creating Web Server	
	Handling Http Requests	
	Sending Requests	
	File System	
	Reading a File Asynchronously / Synchronously	
	Writing a File Asynchronously / Synchronously	
	Opening a File	

	Deleting a File	
	IO Operations	
	Debugging NodeJs Application	
	Core NodeJs Debugger	
	Debugging with Visual Studio Code	
	Events	
	EventEmitter Class	
	Returning EventEmitter	
	Inhering Events	
	ExpressJs	
	Introduction to ExpressJs	
	Env., Setup of ExpressJs	
	Creating a Sample Program in ExpressJs	
	Creating a Static Routing & Dynamic Roting	
	Working with HTTP Methods	
	Creating the URL Building	
	Using Middleware Functions	
	Creating a Templating	
	Working with Static Files	
	Parsing Form Data	
	Parsing & Fetching & Connecting with Database	
	Cookies & Sessions	
	Authentication	
	RestFul Api's	

	Scaffolding	
	Error Handling	
	Debugging	
6	**MongoDb**	
	Introduction to MongoDb	
	Differences between Sql vs NoSql	
	Features & Advantages of MongoDb	
	Installing MongoDb along with Compass	
	Understanding the Terminology: Database, Collection, Document, etc.,	
	Commands in MongoDb	
	Creating Database, Drop Database	
	Creating Collection, Drop Collection	
	Insert, Update, Delete the Documents	
	Writing Conditions while Retrieving, Updating the Documents	
	Data Aggregation	
	$match, $project, $group, $unwind, $sort, $limit, $set, $lookup	
	$count, $distinct,	
	Working with Indexes, Types of Indexes	
7	**Creating the Project with MEAN Stack**	