



WEBORYX ACADEMY
BY SAMMEGH TECHNOLOGIES

FRONTEND DEVELOPMENT SYLLABUS

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1	Introduction to Web Development
2	Difference between websites and web applications
3	IDE's: Visual Studio Code and Sublime Text
4	HTML
	<ol style="list-style-type: none">1. HTML basic introduction (Elements and Tags)2. Structure and syntax (doctype)3. Comment4. Headings5. Paragraphs6. Text Formatting(,,<i>,,<sup>,<sub>),7. Semantictag(<article>,<aside>,<figcaption>,<figure>,<footer>,<header>,<main >,<mark>,<nav>,<section>,<summary>8. Section Divisions(div,span,br,hr)9. Label the element10. Output element11. Void elements12. Media elements13. Progress elements14. Anchors and Hyperlinks

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	<ul style="list-style-type: none"> 15. Embed 16. Iframes 17. Data Attributes 18. Classes and id 19. Linking Resources: include javascript code in HTML and have CSS code in HTML 20. Lists 21. Tables 22. Images 23. Images maps 24. Input control elements 25. Forms 26. SVG 27. Canvas 28. HTML event attributes
5	CSS
	<ul style="list-style-type: none"> 1. CSS basic introduction 2. Structure and syntax 3. Comments 4. Selectors 5. Backgrounds 6. The box model 7. Margins 8. Padding 9. Border 10. Overflow 11. Outlines 12. Floats 13. Typography 14. Flexbox

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	<ul style="list-style-type: none"> 15. Specificity 16. Colors 17. Opacity 18. Length Units 19. Pseudo Elements 20. Positioning 21. Grid 22. Media Queries 23. Transitions 24. Animations 25. Performance
6	JavaScript
	<ul style="list-style-type: none"> 1. Javascript Intro 2. Basics of Javascript: <ul style="list-style-type: none"> • Constants, Variables, comments, console, datatypes, Date, Date comparison, declare and assignment • Scope, modules (export, import, require), variable coercion, destructuring, arrow function, hoisting 3. Operators: arithmetic and bitwise 4. Conditions 5. String: String methods, string interpolation, string literal, 6. Arrays: Array methods, 7. Objects: Object methods (Object.create, Object.assign, Object.freeze), 8. Loops 9. Functions and closures 10. Prototypes 11. Class, this 12. Setters and getters 13. Events 14. Inheritance 15. Callbacks

	<ul style="list-style-type: none"> 16. Intervals and Timeouts 17. Cookies 18. Web storage 19. JSON 20. Promises 21. Set and Map 22. Prompts 23. BOM 24. Event Loop 25. Strict mode 26. Data manipulation, Dom manipulation 27. Template literals 28. Fetch 29. Async/Await 30. Error Handling 31. Interview Questions
7	React JS
	<ul style="list-style-type: none"> 1. Es6(rest,spread,object and array destructure,ternary,string literal,optional chaining,map,filter,reduce,sort),promises,async/await 2. React JS Intro 3. React Features(virtual and real DOM,,diffing algorithm) 4. Pros and Cons 5. Reactjs vs React Native 6. React JSX 7. React Components(Class and Functional) 8. React State 9. React Props 10. Props validation 11. State vs props 12. Life cycle method

	<p>13. React Forms(handle form,basic form valiation,forward ref,events,synthetic events)</p> <p>14. Controlled vs uncontrolled</p> <p>15. Conditional rendering</p> <p>16. React lists,keys</p> <p>17. Refs</p> <p>18. Fragments</p> <p>19. React Router</p> <p>20. Higher Order Component</p> <p>21. Code splitting</p> <p>22. React context</p> <p>23. React redux</p> <p>24. Strict mode</p> <p>25. Error boundaries</p> <p>26. Axios</p>
8	Tailwind css, Material UI
	Basics of Tailwind and Material UI
9	Github
	<ol style="list-style-type: none"> 1. Git installation 2. Basics of git <ul style="list-style-type: none"> • create repository and commit • clone a repository • setting your username and email 3. Browsing the history 4. Git log 5. Working with remotes 6. Staging 7. Ignoring files and folders 8. Branching 9. Stash and pop

	10. Overview of bitbucket
10	Typescript
	<ol style="list-style-type: none"> 1. Introduction to Typescript 2. Types in Typescript 3. Interfaces in Typescript 4. Functions in Typescript 5. Enums 6. Type Inferring 7. Unions 8. Class 9. Generics 10. React project setup in typescript
11	NextJs
	<ol style="list-style-type: none"> 1. Introduction to NextJs 2. Styling in Nextjs 3. APIs in Nextjs 4. SEO and Performance 5. Implement Component 6. Routing 7. Rendering 8. Error Handling

BACKEND DEVELOPMENT SYLLABUS

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1	Introduction to Web Development
2	Difference between websites and web applications

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3	IDE's: Visual Studio Code and Sublime Text
4	Javascript Advanced, Javascript OOPS
5.	OS Basics, Networking Basics
	<ol style="list-style-type: none"> 1. Introduction to Operating System 2. Introduction to Computer Network 3. HTTP vs HTTPS 4. SMTP,UDP,IMAP 5. DNS 6. IPV4,IPV6
6.	Bash/Shell/Linux Command
	<ol style="list-style-type: none"> 1. Basics of Linux 2. Intro to Shell 3. Relative and Absolute Path 4. Creating Files and Folders 5. Commands
7.	Git
	<ol style="list-style-type: none"> 1. Git installation 2. Basics of git <ul style="list-style-type: none"> • create repository and commit • clone a repository • setting your username and email 3. Browsing the history 4. Git log 5. Working with remotes 6. Staging 7. Ignoring files and folders 8. Branching 9. Stash and pop
8.	NodeJS/ExpressJS
	<ol style="list-style-type: none"> 1. Installation

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	<ol style="list-style-type: none"> 2. Introduction 3. npm 4. Basic (features of nodejs, event loop,blocking and non-blocking,packages(package.json)), Executing node command on command line 5. What is a server ? 6. Status codes 7. HTTP methods 8. API / REST API 9. Filesystem I/O 10. Exporting and importing module 11. Environment 12. Exception Handling 13. JSON 14. File Upload 15. Buffer 16. Events 17. File system 18. Global 19. Modules 20. OS 21. Process 21. Basics(intro,installation,express req,express res,http method(GET,POST,PUT,DELETE,PATCH)) 22. Serving static files 23. Routing,cookies, file upload,middleware(body-parser,cookie-parser,multer),bcryptjs 24. Express template(ejs,pug),JWT,express method(express.json(),express.Router()etc.),
<p>9.</p>	<p>MongoDB</p>
	<ol style="list-style-type: none"> 1. Installation,Basics(Creating Database,) 2. JSON and BSON 3. Collections & documents,MongoDB Compass,MongoDB Shell,Mongo Atlas,Mongoose 4. CRUD operation(create,read,update,delete),MongoDB Query Operators,MongoDB Aggregation Pipelines,fault tolerance 5. Indexes 6. Replication

10.	Postgres/MySQL
	<p>1. Installation(MySQL,WorkBench),Managing Database- create database,drop database,</p> <p>2. Datatypes • Numeric DataTypes - Decimal,Double & Float, Bool, Boolean, • Date and Time Datatypes - Date, DateTime, Timestamp,Time • String Data Types - Char and Varchar,Blob & Text, ENUM</p> <p>3. Managing Tables • Create,read,update,delete • Auto increment,null,not null,default,primary key,foreign key • ALTER table command - ADD, MODIFY,CHANGE, DROP, RENAME</p> <p>4. Querying Data- select clause</p> <p>5. Sorting Data- ORDER BY clause</p> <p>6. Filtering Data • WHERE Clause • WHERE Clause With Equality Operator • WHERE Clause With Comparison Operators • AND Operator • OR Operator IN Operator • BETWEEN Operator • LIKE Operator • LIMIT Operator</p> <p>7. Joining table • Introduction to JOINS • INNER JOIN • OUTER JOIN • LEFT JOIN • RIGHT JOIN • SELF JOIN</p> <p>8. Grouping Data • GROUP BY • Aggregate functions (COUNT(), SUM(), AVG(), MIN(), MAX())</p>
11.	Redis
12.	WebRTC
13.	WebSocket/SocketIO
14.	Monorepo/microservice