syllabus

Course 1: Introduction to Web Development and JavaScript Basics

- Overview of full-stack development
- Setting up the development environment
- Introduction to JavaScript
- Variables, data types, and operators

Course 2: JavaScript Intermediate

- Control structures: conditionals and loops
- Arrays
- Objects

Course 3: Functional programming vs OOP

- Functions and scope
- Class in JS
- Prototype chain
- `this`
- Compare with functional programming

Course 4: Advanced JavaScript

- Set and Map
- Regular Expression
- Date and Time
- ES6+ features like arrow functions, spread/rest operators, destructuring
- Shallow vs Deep Copy

Course 5: Asynchronous JavaScript

- Callbacks
- Promises and `async/await`
- `try/catch`

Course 6: Typescript

- Introduction to Typescript
- Typescript vs JavaScript

Course 7: Introduction to Node.js

- Node.js and its use cases
- Setting up a Node.js environment

- Usage of `fs` and `http` module

Course 8: Introduction to Express.js

- Express.js and its use cases
- Routing with Express.js
- Middleware in Express.js
- Templating with Express.js

Course 9: Databases

- Introduction to databases
- Relational vs non-relational databases
- Using MongoDB with Node.js
- Building CRUD APIs with MongoDB and Express.js

Course 10: Building REST APIs with Express.js

- Understanding REST principles
- Building a basic REST API with Express.js

Course 11: Introduction to Authentication

- Understanding authentication and authorization
- Password hashing and basic security
- Introduction to JWT based authentication

Course 12: Introduction to React

- Understanding React and its use cases
- JSX and rendering elements
- Functional components vs class components

Course 13: React Components, State, and Props

- Understanding props and state
- Component lifecycle methods
- Conditional rendering
- Introduction to Hooks (useState, useEffect)
- Context API for state management

Course 14: React Router

- Introduction to routing in single page applications
- Implementing routing with React Router
- Dynamic routes and nested routes

Course 15: Introduction to Redux

- Understanding Redux
- The three principles of Redux
- Implementing Redux in a React application

Course 16: Advanced Redux

- Understanding Redux Middleware
- Async actions in Redux
- Connecting React and Redux

Course 17: Fetching Data from APIs in React

- Building a client for your Node.js API
- Error handling in React

Course 18: User Authentication in React

- Implementing login and registration forms
- Managing authentication state

Course 19: Full-Stack Application Project - Part 1

- Starting a full-stack application from scratch
- Implementing the backend (Node.js, MongoDB)
- Developing the frontend (React, Redux)

Course 20: Full-Stack Application Project - Part 2

- Finalizing the full-stack application
- Testing and debugging
- Best practices for full-stack development

Course 21 - 24: Group Project