

## Course NodeJS

Day	Subject	Topics to be Covered
1	Introduction to Node.js	1. Overview of Node.js 2. Benefits of Node.js 3. Event-driven, non-blocking model 4. Brief history of Node.js
2	JavaScript Fundamentals	1. Variables and data types 2. Operators 3. Control structures 4. Functions
3	JavaScript Asynchronous Programming	1. Callback functions 2. Promises 3. Async/Await
4	Node.js Setup	1. Installing Node.js 2. NPM (Node Package Manager) 3. Creating a basic Node.js app 4. Running a Node.js app
5	Understanding Servers	1. What is a server? 2. Client-Server Architecture 3. Creating a basic HTTP server using Node.js 4. Introduction to Express.js
6	Introduction to MongoDB	1. NoSQL Databases 2. Overview of MongoDB 3. Installing MongoDB 4. Basic MongoDB operations
7	API and Endpoints	1. Introduction to APIs 2. Understanding endpoints 3. RESTful APIs 4. Creating a simple API with Express.js
8	Advanced Node.js	1. Modules in Node.js 2. File system module 3. Path module 4. Event module
9	Using NPM	1. Understanding packages 2. Installing packages 3. Updating and removing packages 4. package.json file
10	Version Control with Git	1. Basics of Git 2. Creating a Git repository 3. Git commands 4. Using GitHub
11	Express.js Framework	1. Understanding middleware 2. Handling routes with Express.js 3. Serving static files 4. Error handling
12	Introduction to Mongoose	1. What is Mongoose? 2. Connection between Node.js and MongoDB using Mongoose 3. Mongoose schemas and models 4. CRUD operations with Mongoose

13	Handling HTTP Requests	1. Understanding HTTP methods (GET, POST, PUT, DELETE) 2. Implementing methods in Express.js 3. Request and response objects in Express.js
14	Introduction to Postman	1. Overview of Postman 2. Creating requests in Postman 3. Testing APIs with Postman
15	Schema Validation with Mongoose	1. Understanding schema validation 2. Built-in validators in Mongoose 3. Custom validators 4. Asynchronous validators
16	MongoDB Data Types and Queries	1. Data types in MongoDB 2. Basic queries (find, findOne) 3. Update operations (findOneAndUpdate, findByIdAndUpdate) 4. Delete operations (findOneAndDelete, findByIdAndDelete)
17	Advanced MongoDB Queries	1. Logical operators in MongoDB queries 2. Array operators 3. Query projection
18	Async/Await in JavaScript	1. Understanding Async/Await 2. Error handling with Async/Await 3. Using Async/Await with Mongoose
19	Node.js Application Structure	1. MVC (Model-View-Controller) pattern 2. Organizing a Node.js application 3. Understanding routes, models, and controllers
20	Test 1	Review and assessment of the topics covered
21-24	MongoDB Aggregation	1. Introduction to MongoDB aggregation 2. Aggregation stages (match, group, sort, etc.) 3. Complex aggregation pipelines 4. Using aggregation in a Node.js application
25	Introduction to Middleware	1. Understanding middleware in Express.js 2. Types of middleware 3. Creating and using custom middleware
26	Authentication in Node.js	1. What is authentication? 2. User registration and login 3. Password hashing with bcryptjs 4. Generating and verifying JSON Web Tokens (JWT)
27	Authorization in Node.js	1. What is authorization? 2. Role-based authorization 3. Implementing authorization middleware
28	Test 2	Review and assessment of the topics covered

29-32	Building a Full-Stack Application	1. Planning the application 2. Setting up the backend 3. Implementing user authentication and authorization 4. Building the frontend
33	Introduction to Database Management Systems (DBMS)	1. Overview of DBMS 2. Types of DBMS (Relational, NoSQL) 3. SQL vs NoSQL
34-35	Relational Databases and SQL	1. Basics of SQL 2. Creating tables and inserting data 3. Querying data with SQL 4. Updating and deleting data
36	Test 3	Review and assessment of the topics covered
37-49	Project Work	Project development and assessment
50	Interview Preparation	1. Common Node.js interview questions 2. JavaScript interview questions 3. MongoDB interview questions 4. Interview tips and best practices