

**Course Description:** This in-depth Node.js course is designed to take you from beginner to proficient developer. You'll learn to build scalable, high-performance web applications using JavaScript on the server side. The course covers core Node.js concepts, popular frameworks like Express.js, database integration, API development, and deployment strategies.

## Node.js Development

### 1. Introduction to Node.js

- What is Node.js?
- JavaScript on the server
- Event-driven, non-blocking I/O model

### 2. Setting up the environment

- Installing Node.js
- npm (Node Package Manager)
- Basic command-line usage

### 3. Core concepts

- Modules and require
- Event loop
- Callbacks and asynchronous programming
- Promises and async/await

### 4. Built-in modules

- fs (File System)
- http/https
- path
- os

### 5. npm and package management

- Creating a package. Json
- Installing and managing dependencies
- Creating and publishing packages

### 6. Express.js framework

- Routing
- Middleware
- Template engines
- RESTful API development

### 7. Database integration

- MongoDB with Mongoose
- SQL databases (e.g., MySQL, PostgreSQL)

## 8. Authentication and security

- User authentication
- JWT (JSON Web Tokens)
- CORS and security best practices

## 9. Testing

- Unit testing with Jest or Mocha
- Integration testing

## 10. Deployment and DevOps

- Deploying to cloud platforms (e.g., Heroku, AWS)
- CI/CD pipelines
- Docker containerization

