

Creating Custom APIs Using AI APIs with Node.js Course

Course Duration: 40 Hours

Course Code: NODE-AI-201

1. Course Overview

The **Creating Custom APIs Using AI APIs with Node.js Course** is designed to help learners build intelligent and scalable APIs by integrating Artificial Intelligence APIs with Node.js. The course covers the fundamentals of API development, working with AI-powered APIs (like OpenAI, Hugging Face, or Google Cloud AI), handling requests and responses, authentication, and deploying custom AI-driven services. Learners will gain practical hands-on experience in creating and deploying real-world AI-based applications.

2. What You'll Learn

- Fundamentals of **RESTful API development** with Node.js and Express
- How to integrate **third-party AI APIs** (OpenAI, Hugging Face, Google AI, Azure AI, etc.)
- Designing and building **custom APIs** that utilize AI models
- Handling **asynchronous operations** and API calls effectively
- Managing **authentication and API keys** securely
- Error handling and **response formatting best practices**
- Working with **JSON data, middleware, and CORS**
- Deploying APIs to **cloud platforms** (Heroku, AWS, Azure, or Vercel)
- Best practices for building **scalable AI-powered APIs**

3. Target Audience

- Beginners in Node.js who want to learn API development
- Developers interested in **integrating AI APIs** into their projects
- Full-stack developers building **AI-powered applications**
- Professionals aiming to create **chatbots, recommendation systems, and intelligent apps**

4. Pre-Requisites

- Basic knowledge of **JavaScript (ES6+)**
- Familiarity with **Node.js and Express.js basics**
- Understanding of REST APIs and JSON
- Optional: Experience with AI/ML APIs

5. Course Content

Module 1: Introduction to APIs and Node.js

- What is an API? REST vs GraphQL
- Setting up Node.js and Express.js
- Basic routes and middleware

Module 2: Working with AI APIs

- Overview of popular AI APIs (OpenAI, Hugging Face, Azure AI, Google Cloud AI)
- Generating API keys and authentication methods
- Making API calls using Axios/Fetch

Module 3: Creating Custom APIs with Node.js



- Designing REST endpoints
- Request/response lifecycle
- Handling query params, body data, and headers

Module 4: Integrating AI into APIs

- Creating a chatbot API with OpenAI
- Sentiment analysis API using Hugging Face models
- Text-to-speech and image recognition APIs

Module 5: Authentication & Security

- Securing API keys and environment variables
- JWT authentication basics
- Handling rate limiting and CORS

Module 6: Error Handling & Response Optimization

- Proper error handling in Express
- Structuring API responses
- Logging and monitoring

Module 7: Deploying AI APIs

- Preparing APIs for production
- Deploying to Heroku, AWS, or Vercel
- Versioning and scaling APIs

Module 8: Capstone Project

- Build and deploy a **custom AI-powered API** (examples: Chatbot API, AI content generator, or AI-powered recommendation API)
- End-to-end implementation and deployment