BOARD INFINITY

COURSE 2 OF 3 · FULL-STACK WEB DEVELOPMENT: PHP, HTML, CSS & JAVASCRIPT SPECIALIZATION

Backend Development: Node.js, Express, MongoDB & REST APIs

Full course syllabus - every module, video lesson, reading and assignment, from client-server basics to secure REST APIs with JWT.

Board Infinity
Instructor · Offered on Coursera

3	34	12	1 week
Modules	Video lessons	Assignments	At 10 hours a week

INSIDE THE COURSE

01	Introduction to Server-Side Development	5 hours to complete
02	Working with Databases	4 hours to complete
03	Building and Consuming APIs	5 hours to complete

Enroll on Coursera

https://www.coursera.org/learn/backend-development-nodejs-express-mongodb-restapis

01 ABOUT THE COURSE

From client-server basics to secure APIs.

Backend Development: Node.js, Express, MongoDB & REST APIs teaches the server side of web development. Across three modules you learn how client-server architecture works and build servers with Node.js and Express, design and query databases with MongoDB, and build secure RESTful APIs with authentication and authorization.

Everything is delivered through short video lectures, readings, quizzes and discussion prompts - 34 videos, 9 readings and 12 assignments in all. Basic JavaScript, HTML and CSS help, and familiarity with the command line is useful.

WHO IT'S FOR

Front-end developers
Moving into full-stack development.

Aspiring backend developers
Learning to build servers, databases and APIs.

Software engineers
Specializing in API design and security.

Computer science students
Building database-driven web applications.

WHAT YOU'LL LEARN

01 **Understand server-side architecture** Module 1
Explain server-side architecture principles and evaluate backend technologies

02 **Build Node.js and Express apps** Module 1
Build Node.js applications with Express.js, including routing, middleware and error handling

03 **Design and optimize MongoDB databases** Module 2
Design MongoDB databases with advanced querying, indexing and optimization

04 **Build secure REST APIs** Module 3
Build secure RESTful APIs with JWT authentication, role-based authorization and data validation

02 SYLLABUS

Three modules, one backend stack.

1 week to complete at 10 hours a week. Flexible schedule - learn at your own pace.

01 Introduction to Server-Side Development

Server-side technologies, Node.js basics and Express.js

5 hours
12 videos

BY THE END OF THIS MODULE YOU CAN

- ✓ Explain client-server architecture and what happens when you enter a URL
- ✓ Compare server-side languages and technologies
- ✓ Set up a Node.js project and work with modules and packages
- ✓ Build a simple Express server with routing and middleware

CONTENTS: 12 videos (58 min) · 3 readings (90 min) · 4 assignments (105 min) · 1 discussion prompt (10 min) · 2 plugins (30 min)

DISCUSSION: Stepping Behind the Scenes of the Web (10 min)

TOPICS: Overview of Server-Side Technologies · Basics of Node.js · Introduction to Express.js · Quick Course Check-In (plugin)

You'll leave with: a working Node.js and Express foundation - from how the web works to your first server with routes and middleware.

02 Working with Databases

SQL vs NoSQL, MongoDB with Node.js, and advanced concepts

4 hours
9 videos

BY THE END OF THIS MODULE YOU CAN

- ✓ Compare types of databases, and SQL and NoSQL databases
- ✓ Set up MongoDB Atlas and use MongoDB with Node.js
- ✓ Improve query performance with indexing and optimization
- ✓ Work with transactions and aggregation pipelines

CONTENTS: 9 videos (33 min) · 3 readings (90 min) · 4 assignments (105 min)

TOPICS: Introduction to Databases · Using MongoDB with Node.js · Advanced Database Concepts

You'll leave with: the judgment to choose the right database, and the skills to connect, query and optimize MongoDB from Node.js.

03

Building and Consuming APIs

RESTful design, authentication and authorization, consuming APIs

5 hours

13 videos

BY THE END OF THIS MODULE YOU CAN

- ✓ Apply the principles of REST and design RESTful endpoints
- ✓ Implement RESTful services with Express
- ✓ Secure APIs with JWT authentication and role-based access control
- ✓ Fetch data, handle responses and errors, and integrate APIs in front ends

CONTENTS: 13 videos (48 min) · 3 readings (90 min) · 4 assignments (105 min) · 1 discussion prompt (10 min) · 1 plugin (15 min)

DISCUSSION: Who Gets Access? The Logic Behind Secure APIs (10 min)

TOPICS: RESTful API Design | Authentication and Authorization | Consuming APIs

You'll leave with: secure REST APIs you can build with Express, protect with JWT and roles, and consume from a front end.

03 TOOLS & SKILLS

The themes that run through the course.

Node.js Runtime

JavaScript on the server - projects, core modules and packages.
In this course: Module 1 sets up Node.js projects from scratch.

Express.js Framework

The web framework for servers, routing and middleware.
In this course: Module 1 builds a simple server; Module 3 builds RESTful services.

MongoDB Database

The document database for flexible data, with MongoDB Atlas in the cloud.
In this course: Module 2 covers setup, indexing, transactions and aggregations.

REST APIs & security APIs

RESTful design, JWT authentication and role-based access control.
In this course: Module 3 builds, secures and consumes APIs.

SKILLS YOU LEAVE WITH

Server-side foundations

- Client-server architecture
- Node.js modules & packages
- Express routing & middleware
- Server-side languages

Databases

- SQL vs NoSQL
- MongoDB Atlas setup
- Indexing & optimization
- Transactions & aggregations

APIs & security

- RESTful endpoint design
- JWT authentication
- Role-based access control
- Consuming APIs in front ends

04 CERTIFICATE & CAREER

Finish with a shareable certificate.

Add it to LinkedIn
Add this credential to your LinkedIn profile, resume, or CV.

Share it anywhere
Share it on social media and in your performance review.

Earned, not attended
Awarded on completion of the graded quizzes in all three modules.

Course 2 of 3
Part of the Full-Stack Web Development: PHP, HTML, CSS & JavaScript Specialization.

ROLES THESE SKILLS SUPPORT

Backend Developer · Node.js Developer · Full-Stack Developer · API Developer · MERN Stack Developer · Junior Software Engineer

Board Infinity
Instructor · Offered on Coursera

Intermediate level · Taught in English · Flexible schedule

Ready to build the backend?

Enrollment, lessons, grading and the certificate all happen on Coursera.

Enroll on Coursera

Course page: coursera.org/learn/backend-development-nodejs-express-mongodb-restapis

Want a coach alongside the course?

Board Infinity 1:1 coaching is a separate, optional Board Infinity offering - it is not part of the Coursera course.
Details: https://www.boardinfinity.com/career-coaching/

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