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# Server-side Development with NodeJS, Express and MongoDB

★★★★★ 4.7 2,244 ratings | 97%

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## About this Course

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This course deals with all things server-side. We base the entire course around the NodeJS platform. We start with a brief overview of the Web protocols: HTTP and HTTPS. We examine NodeJS and NodeJS modules: Express for building web servers. On the database side, we review basic CRUD operations, NoSQL databases, in particular MongoDB and Mongoose for accessing MongoDB from NodeJS. We examine the REST concepts and building a RESTful API. We touch upon authentication and security. Finally we review backend as a service (BaaS) approaches, including mobile BaaS, both open-source and commercial BaaS services.

At the end of this course, you will be able to:

- Demonstrate an understanding of server-side concepts, CRUD and REST
- Build and configure a backend server using NodeJS framework
- Build a RESTful API for the front-end to access backend services

This course is part of multiple programs

This course can be applied to multiple Specializations or Professional Certificates programs. Completing this course will count towards your learning in any of the following programs:

- [Full-Stack Web Development with React Specialization](#)
- [Full Stack Web Development with Angular Specialization](#)

### SKILLS YOU WILL GAIN

[Authentication](#) [Node.js](#) [Mongodb](#) [Express.js](#)**Flexible deadlines**

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**Intermediate Level****Approx. 48 hours to complete****English**

Subtitles: Arabic, French, Portuguese (European), Italian, Vietnamese, German, Russian, English, Spanish

## Instructor

Instructor rating  4.73/5 (379 Ratings) ⓘ**Jogesh K. Muppala**

Associate Professor

Department of Computer Science and Engineering

 495,176 Learners 12 Courses

## Offered by

**The Hong Kong University of Science and Technology**

HKUST - A dynamic, international research university, in relentless pursuit of excellence, leading the advance of science and technology, and educating the new generation of front-runners for Asia and the world.



The courses helped me understand my strengths and weaknesses, and gave me the confidence I needed to quit my job and launch my own startup.

— Zeeshan U.



I'm at the top of my class at the Institute, and I'm well-informed of the latest research going on in my field. All of this is possible thanks to Coursera.

— Siddhant S.



Coursera gave me confidence and helped me learn anything if I put my mind to it. I break into a new industry.

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## Syllabus - What you will learn from this course

Content Rating 97% (17,598 ratings) [\(i\)](#)

WEEK



11 hours to complete

1

### Introduction to Server-side Development

In this module you will be introduced to Node, Node modules and the Node HTTP server. You will learn about the Express framework and how to set up a REST API using Express.



21 videos (Total 288 min), 27 readings, 2 quizzes [SEE LESS](#)



21 videos

Welcome to Server-Side Development with NodeJS, Express and MongoDB 10m

How to Use the Learning Resources 9m

What is Full-Stack Web Development? 5m

Exercise (Video): Setting up Git 6m

Exercise (Video): Basic Git Commands 18m

Exercise (Video): Online Git Repositories 12m

Node.js and NPM 3m

Exercise (Video): Setting up Node.js and NPM 1m

Node Modules 10m

Exercise (Video): Understanding Node Modules 17m

Node Modules: Callbacks and Error Handling 9m

Exercise (Video): Node Modules: Callbacks and Error Handling 21m

Networking Essentials 16m

Node and the HTTP Module 6m  
Exercise (Video): Node and the HTTP Module 32m  
Introduction to Express 13m  
Exercise (Video): Introduction to Express 21m  
Brief Representational State Transfer (REST) 16m  
Express Router 8m  
Exercise (Video): Express Router 40m  
Assignment 1 Requirements (Video): Node Modules, Express and REST API 5m

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 **27 readings**

Welcome to Server-Side Development with NodeJS, Express and MongoDB: Additional Resources 10m  
Full Stack Web Development: The Big Picture: Objectives and Outcomes 10m  
Full Stack Web Development: Additional Resources 10m  
Setting up Your Development Environment: Git: Objectives and Outcomes 10m  
Setting up your Development Environment 10m  
Exercise (Instructions): Setting up Git 10m  
Exercise (Instructions): Basic Git Commands 10m  
Exercise (Instructions): Online Git Repositories 10m  
Setting up your Development Environment: Git: Additional Resources 10m  
Introduction to Node.js and NPM: Objectives and Outcomes 10m  
Exercise (Instructions): Setting up Node.js and NPM 10m  
Introduction to Node.js and NPM: Additional Resources 10m  
Node Modules: Objectives and Outcomes 10m  
Exercise (Instructions): Understanding Node Modules 10m  
Exercise (Instructions):Node Modules: Callbacks and Error Handling 10m  
Node Modules: Additional Resources 10m  
Node and HTTP: Objectives and Outcomes 10m  
Exercise (Instructions): Node and the HTTP Module 10m  
Node and HTTP: Additional Resources 10m  
Introduction to Express: Objectives and Outcomes 10m  
Exercise (Instructions): Introduction to Express 10m  
Exercise (Instructions): Express Router 10m  
Introduction to Express: Additional Resources 10m  
Assignment 1: Node Modules, Express and REST API: Additional Resources 10m  
Ideation: Objectives and Outcomes 10m  
Ideation Report Template 10m  
Ideation: Additional Resources 10m

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 **10 hours to complete**

**2**

## Data, Data, Where art Thou Data?

This module looks in detail at data storage with MongoDB, the popular NoSQL database. You will learn first about Express generator for scaffolding an Express application. Then you will learn about MongoDB. You will learn how to interact with MongoDB from a Node application. Then you will learn the Mongoose ODM to create schemas and models, and interact with MongoDB server.



16 videos (Total 233 min), 23 readings, 2 quizzes [SEE LESS](#)

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**16 videos**

Express Generator 4m

Exercise (Video): Express Generator 15m

Introduction to MongoDB 10m

Exercise (Video): Introduction to MongoDB 13m

Node and MongoDB 2m

Exercise (Video): Node and MongoDB Part 1 17m

Exercise (Video): Node and MongoDB Part 2 23m

Callback Hell and Promises 6m

Exercise (Video): Callback Hell and Promises 9m

Mongoose ODM 18m

Exercise (Video): Mongoose ODM Part 1 15m

Exercise (Video): Mongoose ODM Part 2 13m

REST API with Express, MongoDB and Mongoose 7m

Exercise (Video): REST API with Express, MongoDB and Mongoose Part 1 37m

Exercise (Video): REST API with Express, MongoDB and Mongoose Part 2 33m

Assignment 2 Requirements (Video): MongoDB: Requirements 3m

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**23 readings**

Express Generator: Objectives and Outcomes 10m

Exercise (Instructions): Express Generator 10m

Express Generator: Additional Resources 10m

Introduction to MongoDB: Objectives and Outcomes 10m

Exercise (Instructions): Introduction to MongoDB 10m

Introduction to MongoDB: Additional Resources 10m

Node and MongoDB: Objectives and Outcomes 10m

Exercise (Instructions): Node and MongoDB Part 1 10m

Exercise (Instructions): Node and MongoDB Part 2 10m

Exercise (Instructions): Callback Hell and Promises 10m

Node and MongoDB: Additional Resources 10m

Mongoose ODM: Objectives and Outcomes 10m

Exercise (Instructions): Mongoose ODM Part 1 10m

Exercise (Instructions): Mongoose ODM Part 2 10m

Mongoose ODM: Additional Resources 10m

REST API with Express, MongoDB and Mongoose: Objectives and Outcomes 10m

Exercise (Instructions): REST API with Express, MongoDB and Mongoose Part 1 10m

Exercise (Instructions): REST API with Express, MongoDB and Mongoose Part 2 10m

REST API with Express, MongoDB and Mongoose: Additional Resources 10m

Assignment 2: MongoDB: Additional Resources 10m

Architecture Design and Software Structure: Objectives and Outcomes 10m

Architecture Design and Software Structure Report 10m

WEEK

3



8 hours to complete

## Halt! Who goes there?

This module is dedicated to user authentication. We first develop a full-fledged REST API server with Express, Mongo and Mongoose. Thereafter we examine basic authentication and session-based authentication briefly. We then develop token-based authentication with the support of JSON web tokens and the Passport module.



13 videos (Total 287 min), 16 readings, 1 quiz [SEE LESS](#)



13 videos

Basic Authentication 13m

Exercise (Video): Basic Authentication 22m

Cookies, Tea and err ... Express Sessions 17m

Exercise (Video): Using Cookies 15m

Exercise (Video): Express Sessions Part 1 11m

Exercise (Video): Express Sessions Part 2 39m

Passport 9m

Exercise (Video): User Authentication with Passport 25m

Token Based Authentication 14m

Exercise (Video): User Authentication with Passport and JSON Web Token 47m

Mongoose Population 12m

Exercise (Video): Mongoose Population 32m

Assignment 3 Requirements (Video): User Authentication 23m



16 readings

Basic Authentication: Objectives and Outcomes 10m

Exercise (Instructions): Basic Authentication 10m

Basic Authentication: Additional Resources 10m

Cookies, Tea and err ... Express Sessions: Objectives and Outcomes 10m

Exercise (Instructions): Using Cookies 10m

Exercise (Instructions): Express Sessions Part 1 10m

Exercise (Instructions): Express Sessions Part 2 10m

Cookies, Tea and err ... Express Sessions: Additional Resources 10m

User Authentication with Passport: Objectives and Outcomes 10m

Exercise (Instructions): User Authentication with Passport 10m

Exercise (Instructions): User Authentication with Passport and JSON Web Token 10m

User Authentication with Passport: Additional Resources 10m

Mongoose Population: Objectives and Outcomes 10m

Exercise (Instructions): Mongoose Population 10m

Mongoose Population: Additional Resources 10m

Assignment 3: Additional Resources 10m



18 hours to complete

## Backend as a Service (BaaS)

In this module we learn about Mongoose population, a way of cross-referencing documents and populating the documents from other documents. We then review secure communication using HTTPS. We look at Backend as a Service (BaaS) and take a brief look at Loopback.



24 videos (Total 648 min), 34 readings, 2 quizzes [SEE LESS](#)



**24 videos**

HTTPS and Secure Communication 23m

Exercise (Video): HTTPS and Secure Communication 24m

Uploading Files 11m

Exercise (Video): Uploading Files 28m

Cross-Origin Resource Sharing 17m

Exercise (Video): Cross-Origin Resource Sharing 23m

OAuth and User Authentication 25m

Exercise (Video): Using OAuth with Passport and Facebook 36m

Assignment 4 Requirements (Video): Backend as a Service 25m

ConFusion: Integrating the Angular Client and Server 13m

Exercise (Video): Integrating the Angular Client and Server: Updating the REST Server 29m

Exercise (Video): Integrating the Angular Client and Server: The Angular Client 33m

ConFusion: Integrating the React Client and Server 11m

Exercise (Video): Integrating the React Client and Server: Updating the REST Server 1h 8m

Exercise (Video): Integrating the React Client and Server: The React Client 29m

Backend as a Service 18m

Exercise (Video): Firebase 22m

Exercise (Video): Angular Application using Firebase as BaaS 47m

Exercise (Video): React Application using Firebase as BaaS 19m

Exercise (Video): Getting Started with Loopback 14m

Exercise (Video): Loopback Data Sources and Access Control 44m

Exercise (Video): Loopback Relations 35m

Exercise (Video): Angular Application using Loopback as BaaS 32m

Exercise (Video): React Application using Loopback as BaaS 11m



**34 readings**

HTTPS and Secure Communication: Objectives and Outcomes 10m

Exercise (Instructions): HTTPS and Secure Communication 10m

HTTPS and Secure Communication: Additional Resources 10m

Uploading Files: Objectives and Outcomes 10m

Exercise (Instructions): Uploading Files 10m

Uploading Files: Additional Resources 10m

Cross-Origin Resource Sharing: Objectives and Outcomes 10m

Exercise (Instructions): Cross-Origin Resource Sharing 10m

Cross-Origin Resource Sharing: Additional Resources 10m

OAuth and User Authentication: Objectives and Outcomes 10m

Exercise (Instructions): Using OAuth with Passport and Facebook 10m

OAuth and User Authentication: Additional Resources 10m

Assignment 4: Additional Resources 10m

ConFusion: Integrating the Angular Client and Server: Objectives and Outcomes 10m

Exercise (Instructions): Integrating the Angular Client and Server: Updating the REST Server 10m

Exercise (Instructions): Integrating the Angular Client and Server: The Angular Client 10m

ConFusion: Integrating the Angular Client and Server: Additional Resources 10m

ConFusion: Integrating the React Client and Server: Objectives and Outcomes 10m

Exercise (Instructions): Integrating the React Client and Server: Updating the REST Server 10m

Exercise (Instructions): Integrating the React Client and Server: The React Client 10m

ConFusion: Integrating the React Client and Server: Additional Resources 10m

Backend as a Service: Objectives and Outcomes 10m

Exercise (Instructions): Angular Application using Firebase as BaaS 10m

Exercise (Instructions): React Application using Firebase as BaaS 10m

Backend as a Service (BaaS): Firebase: Additional Resources 10m

Backend as a Service: Loopback: Objectives and Outcomes 10m

Exercise (Instructions): Getting Started with Loopback 10m

Exercise (Instructions): Loopback Data Sources and Access Control 10m

Exercise (Instructions): Loopback Relations 10m

Exercise (Instructions): Angular Application using Loopback as BaaS 10m

Exercise (Instructions): React Application using Loopback as BaaS 10m

Backend as a Service: Loopback: Additional Resources 10m

Project Implementation: Objectives and Outcomes 10m

Final Report Template 10m

## Reviews

4.7   
599 reviews

TOP REVIEWS FROM SERVER-SIDE DEVELOPMENT WITH NODEJS, EXPRESS AND MONGODB



by SM Nov 5, 2018

This is really good course to understand the concept of Nodejs and Mr Jogesh has explained in each and every bit of the code. Really worth it and appreciated all who all worked behind this course.



by SY Apr 27, 2019

Its awesome course. and he explained every thing clearly. This course taught me how to code professionally. He did coding in very clean and moderate way. I am very thankful to Mr. Mupalla sir.



by KI Aug 6, 2021

was an awesome course with awesome Instructor. I loved the way instructor explains the each and every point damn clear and expresses it well with an example. One of the Best courses i would say!!



by SS Jul 21, 2019

Good course on Nodejs and MongoDB. It will be helpful, if the instructor add another section of in additional resources for deployment of website for real server(not third party free services).

[View all reviews](#)

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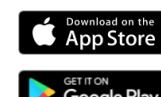
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