

uCertify

Course Outline

Modern Full-Stack React Projects



04 Aug 2025

1. Pre-Assessment
2. Exercises, Quizzes, Flashcards & Glossary
Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
5. State of the Art Educator Tools
6. Award Winning Learning Platform (LMS)
7. Chapter & Lessons

Syllabus

Chapter 1: Introduction

Chapter 2: Preparing for Full-Stack Development

Chapter 3: Getting to Know Node.js and MongoDB

Chapter 4: Implementing a Backend Using Express, Mongoose ODM, and Jest

Chapter 5: Integrating a Frontend Using React and TanStack Query

Chapter 6: Deploying the Application with Docker and CI/CD

Chapter 7: Adding Authentication with JWT

Chapter 8: Improving the Load Time Using Server-Side Rendering

Chapter 9: Making Sure Customers Find You with Search Engine Optimization

Chapter 10: Implementing End-to-End Tests Using Playwright

Chapter 11: Aggregating and Visualizing Statistics Using MongoDB and Victory

Chapter 12: Building a Backend with a GraphQL API

Chapter 13: Interfacing with GraphQL on the Frontend Using Apollo Client

Chapter 14: Building an Event-Based Backend Using Express and Socket.IO

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Chapter 19: Advanced Next.js Concepts and Optimizations

Chapter 20: Deploying a Next.js App

Chapter 21: Diving Deeper into Full-Stack Development

Videos and How To

8. Practice Test

Here's what you get

Features

9. Live labs

Lab Tasks

Here's what you get

1. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

2. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.



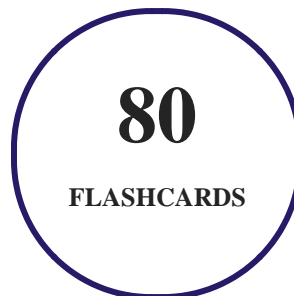
3. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.



4. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



5. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



6. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

7. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

8. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

9. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been

recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**

1. Best Postsecondary Learning Solution

- **2015**

1. Best Education Solution
2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution
3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

- **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

- **2018**

1. Best Higher Education LMS or Learning Platform

2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**

1. Best Virtual Learning Solution
2. Best Content Authoring Development or Curation Solution
3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

10. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Introduction

- Who this course is for
- What this course covers
- To get the most out of this course

- Conventions used

Chapter 2: Preparing for Full-Stack Development

- Motivation to become a full-stack developer
- What is new in this release of Full-Stack React Projects?
- Getting the most out of this course
- Setting up the development environment
- Summary

Chapter 3: Getting to Know Node.js and MongoDB

- Writing and running scripts with Node.js
- Introducing Docker, a platform for containers
- Introducing MongoDB, a document database
- Accessing the MongoDB database via Node.js
- Summary

Chapter 4: Implementing a Backend Using Express, Mongoose ODM, and Jest

- Designing a backend service
- Creating database schemas using Mongoose

- Developing and testing service functions
- Providing a REST API using Express
- Summary

Chapter 5: Integrating a Frontend Using React and TanStack Query

- Principles of React
- Setting up a full-stack React project
- Creating the user interface for our application
- Integrating the backend service using TanStack Query
- Summary

Chapter 6: Deploying the Application with Docker and CI/CD

- Creating Docker images
- Deploying our full-stack application to the cloud
- Configuring CI to automate testing
- Configuring CD to automate the deployment
- Summary

Chapter 7: Adding Authentication with JWT

- What is JWT?
- Implementing login, signup, and authenticated routes in the backend using JWTs
- Integrating login and signup in the frontend using React Router and JWT
- Advanced token handling
- Summary

Chapter 8: Improving the Load Time Using Server-Side Rendering

- Benchmarking the load time of our application
- Rendering React components on the server
- Server-side data fetching
- Advanced server-side rendering
- Summary

Chapter 9: Making Sure Customers Find You with Search Engine Optimization

- Optimizing an application for search engines
- Improving social media embeds
- Summary

Chapter 10: Implementing End-to-End Tests Using Playwright

- Setting up Playwright for end-to-end testing
- Writing and running end-to-end tests
- Reusable test setups using fixtures
- Viewing test reports and running in CI
- Summary

Chapter 11: Aggregating and Visualizing Statistics Using MongoDB and Victory

- Collecting and simulating events
- Aggregating data with MongoDB
- Implementing data aggregation in the backend
- Integrating and visualizing data on the frontend using Victory
- Summary

Chapter 12: Building a Backend with a GraphQL API

- What is GraphQL?
- Implementing a GraphQL API in a backend
- Implementing GraphQL authentication and mutations
- Overview of advanced GraphQL concepts

- Summary

Chapter 13: Interfacing with GraphQL on the Frontend Using Apollo Client

- Setting up Apollo Client and making our first query
- Using variables in GraphQL queries
- Using mutations on the frontend
- Summary

Chapter 14: Building an Event-Based Backend Using Express and Socket.IO

- What are event-based applications?
- Setting up Socket.IO
- Creating a backend for a chat app using Socket.IO
- Adding authentication by integrating JWT with Socket.IO
- Summary

Chapter 15: Creating a Frontend to Consume and Send Events

- Integrating the Socket.IO client with React
- Implementing chat functionality
- Implementing chat commands with acknowledgments

- Summary

Chapter 16: Adding Persistence to Socket.IO Using MongoDB

- Storing and replaying messages using MongoDB
- Refactoring the app to be more extensible
- Implementing commands to join and switch rooms
- Summary

Chapter 17: Getting Started with Next.js

- What is Next.js?
- Setting up Next.js
- Introducing the App Router
- Creating static components and pages
- Summary

Chapter 18: Introducing React Server Components

- What are RSCs?
- Adding a data layer to our Next.js app
- Using RSCs to fetch data from the database

- Using Server Actions to sign up, log in, and create new posts
- Summary

Chapter 19: Advanced Next.js Concepts and Optimizations

- Defining API routes in Next.js
- Caching in Next.js
- SEO with Next.js
- Optimized image and font loading in Next.js
- Summary

Chapter 20: Deploying a Next.js App

- Deploying a Next.js app with Vercel
- Creating a custom deployment setup for Next.js apps
- Summary

Chapter 21: Diving Deeper into Full-Stack Development

- Overview of other full-stack frameworks
- Overview of UI libraries
- Overview of advanced state management solutions

- Pointers on maintaining large-scale projects
- Summary

11. Practice Test

Here's what you get

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

12. Live Labs

The benefits of live-labs are:

- Exam based practical tasks

- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Getting to Know Node.js and MongoDB

- Executing a Node.js Script
- Creating a Web Server
- Creating a Collection, and Inserting and Listing Documents

Implementing a Backend Using Express, Mongoose ODM, and Jest

- Creating a Schema Using Mongoose
- Building a Basic Express Server

Integrating a Frontend Using React and TanStack Query

- Creating a REST API with Node.js and Express

Deploying the Application with Docker and CI/CD

- Creating an Image Upload Server

Adding Authentication with JWT

- Building a Simple Login/Signup System

Improving the Load Time Using Server-Side Rendering

- Benchmarking the Load Time of an Application

Making Sure Customers Find You with Search Engine Optimization

- Implementing Open Graph Meta Tags

Implementing End-to-End Tests Using Playwright

- Setting Up Playwright for End-to-End Testing

Aggregating and Visualizing Statistics Using MongoDB and Victory

- Defining the Event Model and the Service Function to Track Events
- Aggregating Data with MongoDB

Building a Backend with a GraphQL API

- Building a Simple GraphQL Server with Node.js and Express

Interfacing with GraphQL on the Frontend Using Apollo Client

- Using Mutations on the Frontend

Building an Event-Based Backend Using Express and Socket.IO

- Building a Real-Time Chat Application Using Socket.IO

Creating a Frontend to Consume and Send Events

- Styling a Real-Time Chat Application with Socket.IO

Adding Persistence to Socket.IO Using MongoDB

- Storing and Replaying Messages Using MongoDB

Getting Started with Next.js

- Setting Up Next.js

Introducing React Server Components

- Using React Server Components

Advanced Next.js Concepts and Optimizations

- Defining API Routes in Next.js

Here's what you get

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LIVE LABS

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VIDEO TUTORIALS

01:10

HOURS

You can't stay away! Get



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