CAREERFOUNDRY

Cloud Computing for Web Developers

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Course details overview

	Full-time course	Part-time course
Course duration	30-40 hours per week for 1 month	15-20 hours per week for 2 months
Hours	163	163
Course language	English (minimum required level B2)	English (minimum required level B2)
Course location	Online only	Online only
Start dates	The course will start once **every two weeks**. Start dates here.	The course will start once **every two weeks**. Start dates here.
Total number of projects	1	1
Mentor model	1-1 Mentor (3 calls total and unlimited messaging)	1-1 Mentor (3 calls total and unlimited messaging)

1.

Who is the course for and what are the requirements?

This course is for those who'd like to learn cloud computing and gain a basic to intermediate level with deploying web applications using cloud services.

The course can be taken as part of CareerFoundry's Full-Stack Web Development Program after completing your Full-Stack Immersion Course, or standalone.

To successfully complete the course, you'll need to be familiar with frontend and backend web development—preferably the MERN stack (MongoDB, Express, React, and Node.js).

You'll need a computer (macOS, Windows, or Linux) with a webcam, microphone, and an internet connection.

System requirements:

- Operating system: Windows 11, macOS versions 10.13 and later, Ubuntu, Debian, CentOS, or Fedora (Linux)
- Contact us for more information on requirements for your specific operating system

2.

Which tools will you use in the course?

Amazon Web Services (AWS)

You'll use these tools for deploying your web applications:

- AWS Elastic Compute Cloud (EC2)
- AWS Simple Storage Service (S3)
- AWS Virtual Private Cloud (VPC)
- AWS Identity and Access Management (IAM)
- AWS Software Development Kits (SDKs)
- AWS Lambda
- AWS Elastic Compute Cloud (EC2)

LocalStack

You'll use this tool for developing and testing your cloud and serverless apps offline

GitHub

You'll use this tool for hosting application code and collaborating with others

Are there any costs associated with the tools?

As part of this course, you'll create an account with Amazon Web Services (AWS). When signing up, you'll need to provide a payment method such as a credit card, but you'll be able to take advantage of their Free Tier of services for the duration of the course.

3.

How does the course work?

The course provides a **100% online, asynchronous** learning experience—so while there is an overall completion deadline, you get to decide how to fit your study hours around other obligations. You'll be working through the course material in your own personal account on the CareerFoundry platform.

The course is made up of two modules called **"Achievements"**, which are made up of smaller lessons.

Each lesson is made up of reading material, tutorials, a quiz, and a task—where you'll put your learning directly into practice. Each task will contribute to the deliverables that you'll finish the course with.

While there is **no final exam**, you'll have a dedicated, professional **mentor** (assigned based on your timezone) who will assess your submissions against our internal rubric. They'll let you know exactly how to improve your work to get it approved.

The course is counted as complete once the Achievements have been reviewed and approved by your mentor. You will be able to download your **certificate** of completion directly from your dashboard. Take a look at a video of CareerFoundry's learning experience or read more on our How it Works Page.

4.

What kind of support is available?

Mentor

Mentors provide individualized support, advice, and feedback. Your mentor will also provide a detailed video review of the project you complete during the course. You'll have up to three video calls with your mentor over the span of the course; you can schedule these calls via our learning platform's built-in calendar tool. Learn more about our mentors on our Mentors page.

Student Advisor

Student Advisors ensure you have the best possible experience throughout the course. You can message them from your dashboard (within the platform)—they're always happy to answer any questions you have about the administration of your course.

Fellow students

You'll be part of an extensive community of fellow students, both during the course and after graduation. You can reach out to this community on Slack to discuss your coursework, organize meetups, or find a study buddy.

5.

Course Outline

Achievement 1: Introduction to Cloud Computing

In the first Achievement, you'll start by learning the benefits of using cloud computing and why it has become immensely popular. You'll then familiarize yourself with the primary components of cloud computing, including compute, storage, security, and network. After learning about the networking fundamentals, you'll explore common patterns with Virtual Private Cloud (VPC) design for web applications.

Next, you'll move on to AWS's flagship compute service—EC2, and set up an AWS EC2 instance that serves your web application's API. Then comes AWS's object storage service, S3, which you'll use for hosting the client-side component of your web application. Finally, you'll deploy your web application by putting together all you've learned so far, with the database and the API of your web application running on EC2 instances, and the web client hosted on S3.

Achievement 1 will cover the following topics:

1. **Welcome to Cloud Computing**
2. **Cloud Computing Services**
3. **Networking and VPC Fundamentals**
4. **Compute Services**
5. **Compute Services Continued**
6. **Storage Services**
7. **Achievement 1 Wrap-up**

Achievement 2: Advanced Cloud Computing

Now familiar with deploying a web application in the cloud, you'll move to learn how to tackle some of the issues that may arise when deploying a full-fledged web application—scalability and security. You'll be learning about creating custom VPCs, application load balancers (ABL) auto-scaling groups (ASG), and Identity and Access Management (IAM)—these services together provide a scalable and secure cloud framework for deploying your web applications.

Next, you'll add a few popular tools to your toolbox—AWS Software Development Kits (SDKs) and AWS Lambda, which you are most likely to encounter in your journey as a web developer.instances, and the web client hosted on S3.

Achievement 2 will cover the following topics:

1. **VPC Revisited**
2. **Deploying Scalable Apps**
3. **IAM Ready**
4. **AWS SDKs**
5. **Serverless Computing**
6. **Achievement 2 Wrap-up**

See a more detailed course outline here.

6.

What kind of project will you be working on?

> For the duration of the course, you'll deploy a three-tier web application (with a MongoDB database, Node.js backend/server, and React frontend/client) to the cloud, meeting the following guidelines:

- The Node.js API running on an EC2 instance
- The MongoDB database running on an EC2 instance separate from the Node.js API
- An S3 bucket containing the client code for the application

> The final application will be deployed on the cloud, meeting the following requirements:

- There is a custom VPC and within the VPC there exists an application load balancer, an auto- scaling group running web servers targeted by the application load balancer, and an EC2 instance running MongoDB.
- An S3 bucket is configured as a static website hosting the client code of the web application, and another S3 bucket stores images of the application.
- A Lambda function that provides an additional functionality—resizing the images uploaded to an S3 bucket.

7.

Will you receive a certificate?

You'll finish the course with a certificate of completion and a project for your web development portfolio. The certification is in place as an indication of the quality of the course, but in the end, it's the projects and skills that you develop throughout the program that are going to display the quality of your work to current or future employers.

While the course is not university-accredited, it does undergo a rigorous quality assurance and certification process with the ZFU (Staatliche Zentralstelle für Fernunterricht)—the state body for distance learning in Germany. This process ensures that the course meets a high stand for an excellent and effective learning experience. On successful completion of this certification process, the course is assigned a unique approval number which can be checked against a public register.