Course 1 overview

Hello and welcome to **Introduction to Security Principles in Cloud Computing**, the first course in the Google Cloud Cybersecurity Certificate!

In this course, you'll explore the components of cloud computing, including its infrastructure and core products like compute, networks, and storage. To start, you'll learn about cloud service models and the security responsibilities shared between cloud service providers and their customers. Then, you'll learn about security's role in DevSecOps, software pipelines, and the software supply chain. You'll also gain a deeper understanding of cloud security analysts' responsibilities, and the important role they play in the security ecosystem.

Certificate program progress

The Google Cloud Cybersecurity Certificate program has five courses. **Introduction to Security Principles in Cloud Computing** is the first course.

Introduction to Security Principles in Cloud Computing > Strategies for Cloud Security Risk Management > Cloud Security Risks: Identify and Protect Against Threats > Detect, Respond, and Recover from Cloud Cybersecurity Attacks > Put It Together: Prepare for a Cloud Security Analyst Job

1. **Introduction to Security Principles in Cloud Computing** (current course) — In this course, you'll explore the fundamentals of cloud computing, learn how security principles apply to cloud products and services, and investigate Google Cloud tools.

2. Strategies for Cloud Security Risk Management — In this course, you'll learn about risk management frameworks used to secure cloud resources. You'll also be introduced to tools, regulations, and industry standards that cloud security analysts follow on the job.

3. Cloud Security Risks: Identify and Protect Against Threats — In this course, you'll gain experience with tools and techniques used to protect cloud resources from threats. You'll also explore threat and vulnerability management, cloud native principles, and data protection.

4. Detect, Respond, and Recover from Cloud Cybersecurity Attacks — In this course, you'll learn how cloud security professionals use logging and monitoring systems to identify and mitigate attacks. You'll also explore techniques used to detect, respond to, and recover from a security incident.

5. Put It Together: Prepare for a Cloud Security Analyst Job — In this course, you'll add your new skills to your resume and explore job search tips. Then, you'll apply concepts like risk management, identifying vulnerabilities, incident management, and crisis communications in a capstone project.

Course 1 content

Each course in this certificate program is broken into modules. You can complete courses at your own pace, but the module breakdowns are designed to help you finish the entire Google Cloud Cybersecurity Certificate in about 3-6 months if you complete about 1-2 modules per week.

What's to come? Here's a quick overview of the skills you'll learn in each module of this course.

Module 1: Introduction to cloud computing

In this module, you'll explore cloud infrastructure and the components of cloud computing. Then, you'll learn about containers and their applications in the cloud. Finally, you'll discover the cloud storage options for different data types.

Module 2: Security in the cloud

In this module, you'll learn how traditional networking concepts translate to the cloud. Then, you'll learn about security controls used to secure cloud networks, and how controls can be combined to create defense in depth. Finally, you'll explore how cloud service providers and

customers work together to secure cloud resources, including using identity and access management (IAM) policies.

Module 3: The security lifecycle

In this module, you'll learn how DevSecOps has altered the workflow of development, security, and operations professionals. You'll also examine software pipelines and how they use automation to improve the security of the software development process. Then, you'll learn to secure the software supply chain. Last, you'll review infrastructure and policies as code, and practice applying infrastructure as code concepts in the workplace.

Module 4: Cloud security analyst roles and responsibilities

In this module, you'll explore the cloud security analyst's role and responsibilities, and learn about different career paths and job titles you'll encounter in your job search. Then, you'll learn what it's like to be a part of the cloud security ecosystem and work with different teams and people. Finally, you'll examine the different tools that analysts use, and get direct practice with Google's Cloud Shell.

What to expect

Each course offers many types of learning opportunities:

- **Videos** led by Google instructors teach new concepts, introduce the use of relevant tools, offer career support, and provide inspirational personal stories.
- **Readings** build on the topics discussed in the videos, introduce related concepts, share useful resources, and describe case studies.
- **Activities** and **labs** give you practice in applying the skills you're learning and allow you to assess your own work by comparing it to a completed example.
- **Glossaries** provide a list of key terms for you to review to prepare for quizzes.
- **Practice quizzes** allow you to check your understanding of key concepts, and provide you with valuable feedback.
- **Graded quizzes** allow you to demonstrate your understanding of the main concepts of a course. You must score 80% or higher on each graded quiz to obtain a certificate. You can take a graded quiz multiple times to achieve a passing score.

Note: Some learning item types may not be included in every course.

Tips for success

- It's strongly recommended that you go through the items in each lesson in the order they appear because new information and concepts build on previous knowledge.
- Participate in all learning opportunities to gain as much knowledge and experience as

possible.
- If something is confusing, don't hesitate to replay a video, review a reading, or repeat an activity.
- When you encounter useful links in this course, bookmark them so you can refer to the information later for study or review.