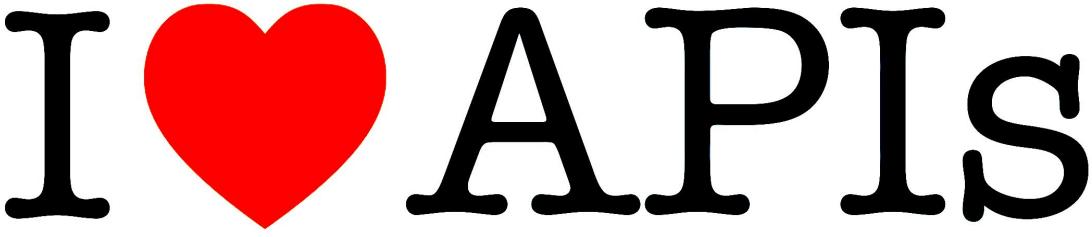
Welcome to Developing APIs with Apigee. This 3-day instructor-led course introduces you to API Design, and teaches you how to build APIs on Google Cloud's Apigee API Platform.



cloud.google.com

apigee.com

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Introductions

Your instructor + You

Background

Position

Organization

Course goals

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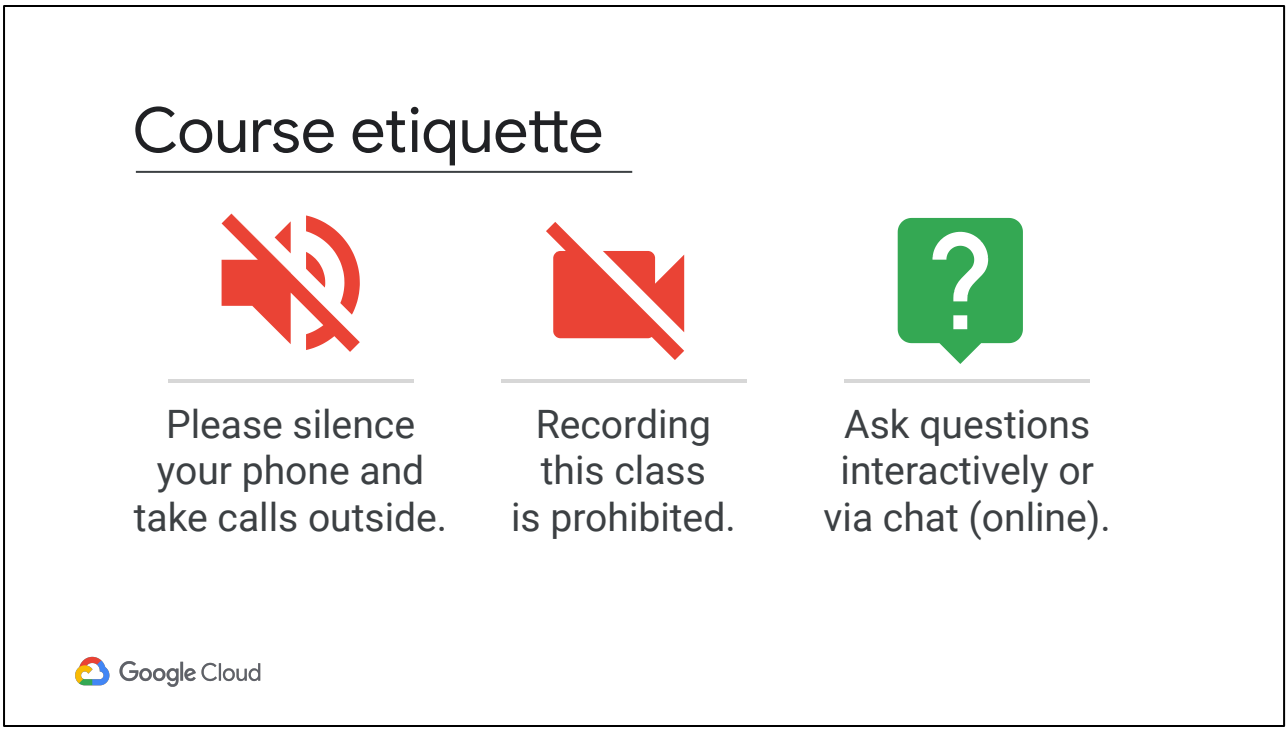
Introductions:

- Your instructor + You
- Background
- Position
- Organization

Facilities:

- Parking
- Facilities
- Food



Course etiquette:

- Recording this class is prohibited.
- Please silence your phone and take calls outside.
- Ask questions interactively or via chat (online).

Target audience and prerequisites

Developers, architects, or engineers responsible for the solutioning, design, or implementation of APIs or digital products that leverage APIs.

- Familiarity with HTTP, XML, JSON, and JavaScript is helpful

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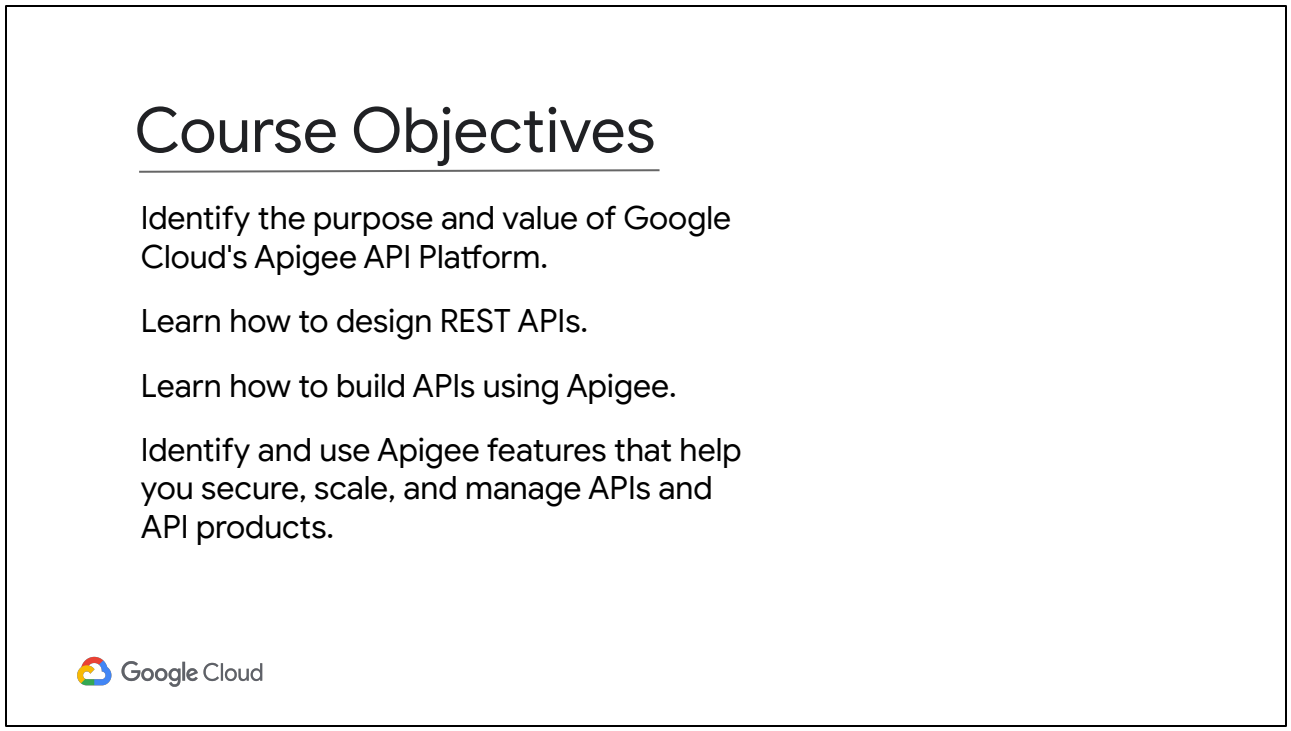
This course is targeted at developers, architects, or engineers who want to design, build, or implement APIs on Apigee.

Ideally you have development experience. Familiarity with HTTP, XML, JSON, and JavaScript is helpful but not required.



Let's take a look at the overall objectives of the course. First, you'll learn about Apigee and how it can be used to solve significant problems for enterprises.

You will learn how to design REST APIs, and how to build them using Apigee.

And you will also learn how to leverage Apigee features that allow you secure, scale, and manage your APIs and API products.

To solidify your learning, the course design enables you to learn concepts and then apply them in immersive hands-on labs.

Lab Design

Labs will teach you how to build Apigee API proxies.

Two types of labs:

- Core labs (1, 2, 3,...)
  - Labs build upon each other
- Supplemental labs (2a, 5a, ...)
  - Labs are standalone

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The labs in this course teach you how to build Apigee API proxies. API proxies are used to implement APIs on Apigee.

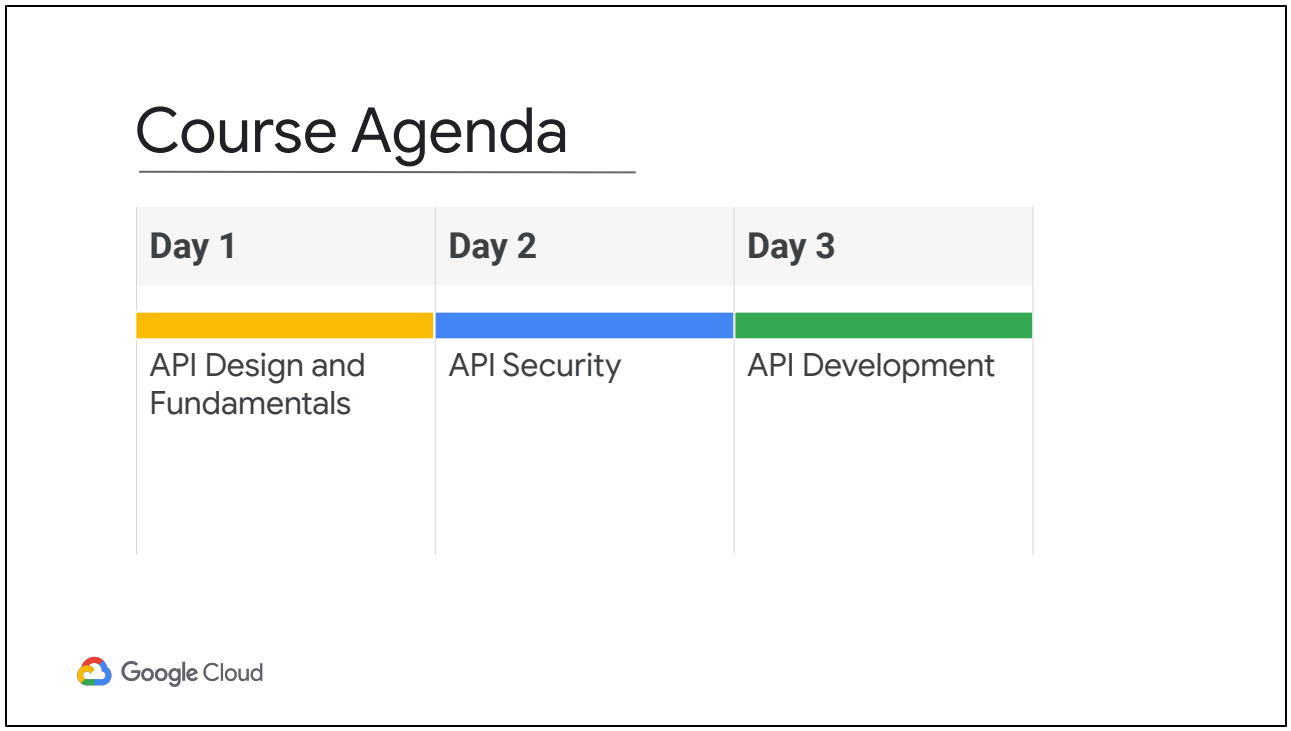
You will be using Qwiklabs for the labs in this course. Each lab will create a new Apigee X organization for you including the prerequisite assets.

There are two types of labs in this course.

There are 13 core labs. These labs will build upon each other, using the concepts you learn in the class. These labs are numbered 1 through 13. The starting point

There are also 4 supplemental labs. These are standalone labs that explore other concepts you will learn during the class. These labs have a letter as part of the lab number. For example, lab 2a is a supplemental lab introduced at the same time as core lab 2.

When we break for labs, please finish the core lab first. The following labs will build upon previous core labs.



The Developing APIs course series is split into three days.

Day 1 focuses on: API Design and Fundamentals
Day 2 focuses on: API Security
Day 3 focuses on: API Development

Agenda - Day 1

API Design and Fundamentals	
1	Apigee Overview
2	API First and OpenAPI Specifications REST API Design, Part I (Basics)
3	API Proxies *Lab 1: Generating an API proxy using an OpenAPI spec* *Lab 2: Target servers (+ supplemental lab)*
4	API Products REST API Design, Part II (Responses) *Lab 3: Publishing APIs as Products*

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Let's step through the modules and core labs for the three days.
In day 1, API Design and Fundamentals, you'll begin with an overview of the Apigee platform.

You'll learn about the concept of API First Design, and you will learn about OpenAPI specifications. You will also learn about the basics of REST API design.

Next, you'll learn about API proxies, and complete two core labs and one supplemental lab.

Finally you will learn about API products, you will learn about responses for REST APIs, and you will complete one core lab and one supplemental lab.

That will conclude day 1.

Agenda - Day 2

API Security	
5	Authentication, Authorization, and OAuth *Lab: Using OAuth client credentials grant type*
6	Content, Transport, and Platform Security *Lab: JSON threat protection (+ supplemental lab)* *Lab: Platform threat protection (+ supplemental lab)*
7	Mediation *Lab: Add XML support* *Lab: Mashup (+ supplemental lab)* *Lab: Shared flows* *Lab: Fault handling*

In day 2, API Security, we'll learn all about API Security concerns, and take a deep dive into OAuth. You will complete a lab that adds OAuth to your proxy. You'll also learn about JWT ("jot") tokens and federated identity for APIs.

You'll also learn about other types of security concerns, including content-based attacks. You will learn how API calls are protected across the network, and you will learn how to protect against internal access of sensitive data. You will complete 2 more core security labs, and 2 supplemental labs.

We will also learn about mediation, including how we call multiple services during an API call. We will learn how to use custom code in your proxies, how you share logic between your proxies, and how errors are handled in Apigee. You will explore these topics using 4 more core labs and one more supplemental lab.

We will probably not get through all of Mediation on day 2, so on day 3 we'll pick up where we left off.

That will end a packed day 2.

Agenda - Day 3

API Development	
7	Mediation (finish)
8	Traffic management *Lab: Traffic management* *Lab: Caching*
9	API Publishing REST API Design, Part III (Versioning) *Lab: Developer portal*
10	Logging and Analytics
11	Advanced Topics

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Finally, day 3 is API Development.

After finishing mediation, we will learn about traffic management, and how to use the spike arrest, quota, and caching policies to manage traffic. You will complete 2 core labs to explore these topics.

Next, you will learn about API publishing, and how you can use an Apigee developer portal to engage app developers, and you will complete a lab to create a developer portal and publish your API on it. You will also learn about versioning your REST APIs.

You will learn how to log errors from your proxies, and how you can use analytics to determine the current state of your APIs and API program.

Finally, we will explore the tools available for you to do CI/CD, and you'll learn about the different Apigee deployment models you can leverage.

At the end of day 3, you will have learned and applied the skills to design and develop APIs using Apigee.

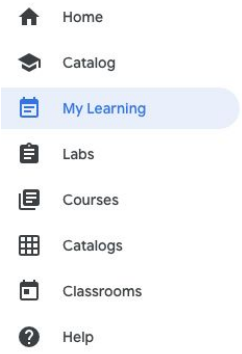
Lab Environment

For each lab, Qwiklabs offers:

- A free set of resources for a fixed amount of time
- A clean environment with permissions

Open Qwiklabs

1. **Open an incognito window** (or private/anonymous window).
2. **Go** to the Qwiklabs URL your instructor provides.
3. **Sign In** with existing account or **Join** with new account (with email you used to register for the course).
4. Launch the course from **My Learning**.



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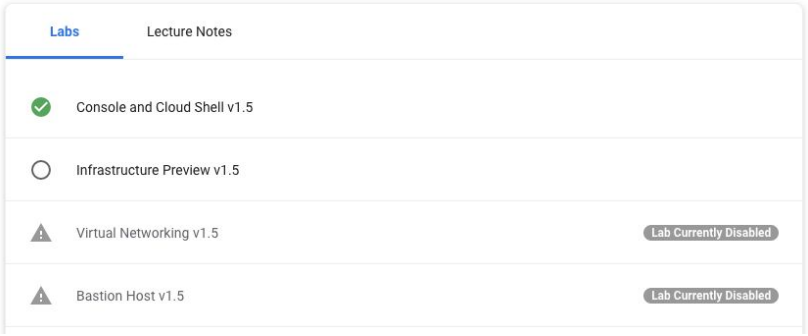
View your labs



Do NOT launch a lab until instructed to do so!

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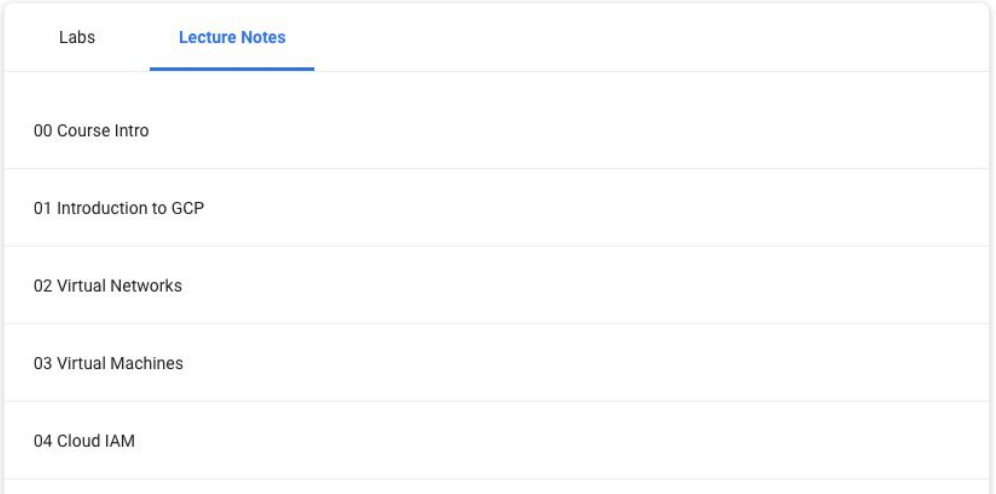
View lecture notes



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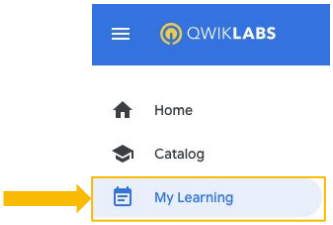
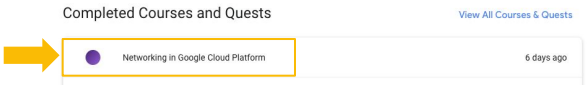
End of class: Materials

1. Click on ***My Learning*** in the left navigation pane.



2. Select the class from the ***Completed Courses*** list.



Materials are available for 2 years

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