

Application Development with LLMs on Google Cloud

In this course, you'll dive into the details of using Large Language Models (LLMs) in your applications. You'll start by exploring the core principles that underpin prompting LLMs. Next, you will focus on Google's latest family of models, Gemini. You'll explore the various Gemini models and their multimodal capabilities. This includes a deep dive into effective prompt design and engineering within the Agent Studio environment. Then, the course moves to application development frameworks and how to implement these concepts into your applications.

**DURATION**

1 day

**LEVEL**

200 - Intermediate

**FORMAT**

Instructor-led

What you'll learn

- Explore the different options available for using generative AI on Google Cloud.
- Use Agent Studio to test prompts for large language models.
- Develop LLM-powered applications using generative AI
- Apply advanced prompt engineering techniques to improve the output from LLMs
- Build a multi-turn chat application using the Gemini API and LangChain

Overview	5 modules · 4 labs
Who this course is for	• Customers, Partners
Products	• Gemini Enterprise Agent Platform • Agent Platform • Gemini Enterprise • Agent Studio on Gemini Enterprise Agent Platform • Gemini Enterprise Agent Platform Workbench
Prerequisites	• Completion of "Introduction to Developer Efficiency on Google Cloud" or equivalent knowledge.
Not covered	• This course does have a deep dive on topics around developing agents using Agent Development Kit and deployment of agents on Google Cloud using solutions such as Agent Engine.

Module 01

Introduction to Generative AI on Google Cloud

Topics	• What is generative AI • Agent Platform on Google Cloud • Generative AI options on Google Cloud • Introduction to course use case
Objectives	• Explore the different options available for using generative AI on Google Cloud.

Module 02

Agent Studio

Topics	• Introduction to Agent Studio • Designing and testing prompts • Data governance in Agent Studio
Objectives	• Use Agent Studio to test prompts for large language models.

Module 03

Generative AI Fundamentals

Topics	• Introduction to grounding • Integrating the Agent Platform Gemini APIs • Chat, memory and grounding • Search principles
Objectives	• Develop LLM-powered applications using generative AI
Activities	• Lab: Getting Started with LangChain + Agent Platform Gemini API

Module 04

Prompt Engineering

Topics	• Review of few-shot prompting • Chain-of-thought prompting and thinking budgets • Meta prompting, multi-step, and panel prompts • RAG and ReAct
Objectives	• Apply advanced prompt engineering techniques to improve the output from LLMs

Module 05

Creating Custom Chat Applications with Agent Platform Gemini API

Topics	• LangChain for chatbots • ADK for chatbots • Chat retrieval
Objectives	• Build a multi-turn chat application using the Gemini API and LangChain