

Building AI Agents with ADK & Gemini

This game utilizes the Agent Development Kit (ADK) to build and orchestrate multi-agent systems using specialized agents for modular coordination. You will equip these agents with Agent Search, Google Search, and custom function tools to extend their capabilities. The process includes implementing a reasoning layer that communicates with remote MCP servers and deploying these agentic applications to Cloud Run and Gemini Enterprise Agent Platform. To ensure output quality, you will evaluate agent performance using the Agent Platform Generative AI Evaluation Service. Finally, you will develop a root agent architecture to manage sub-agents, handle session states, and retrieve values for complex instructions.

**DURATION**

6 hours

**LEVEL**

300 - Advanced

**FORMAT**

Instructor-led

What you'll learn

- Build and orchestrate multi-agent systems using the Agent Development Kit (ADK).
- Equip agents with Agent Search, Google Search, and custom function tools.
- Implement a reasoning layer that communicates with remote MCP servers.
- Deploy agentic applications to Cloud Run and Agent Platform Engine.
- Evaluate agent performance using the Agent Platform Generative AI Evaluation Service.
- Develop a root agent architecture to manage sub-agents, handle session states, and retrieve values.

Overview	0 modules · 5 labs
Who this course is for	Someone who wants to move past simple single-prompt chatbots and master production-grade, multi-agent orchestration.
Products	- Gemini Enterprise Agent Platform - Agent Platform - Gemini Enterprise - Agent Runtime on Gemini Enterprise Agent Platform - Agent Studio on Gemini Enterprise Agent Platform - Confidential Cloud Run
Prerequisites	- Proficiency in Python, REST APIs, and containerization for Cloud Run - Comfortable using the Google Cloud Console and gcloud CLI - Solid understanding of LLMs and agentic workflows

Module 01 [Get started with Agent Development Kit \(ADK\)](#)

Topics	- Agent Development Kit - ADK
Activities	GENAI104 - Get started with Agent Development Kit (ADK) (90 mins)

Module 02 [Empower ADK agents with tools](#)

Topics	- ADK agents - Tools
Activities	GENAI105 - Empower ADK agents with tools (90 mins)

Module 03

Build an AI Agent and Configure an MCP Server on Cloud Run

Topics

- AI Agent
- MCP Server
- Cloud Run

Activities

- GSP1350 - Build an AI Agent and Configure an MCP Server on Cloud Run (90 mins)
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Module 04

Evaluate ADK agent performance using the Agent Platform Generative AI Evaluation Service

Topics

- Evaluate ADK agent
- Agent Platform Generative AI Evaluation Service

Activities

- GENAI110 - Evaluate ADK agent performance using the Agent Platform Generative AI Evaluation Service (90 mins)
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Module 05

Deploy an Agent with Agent Development Kit (ADK): Challenge Lab

Topics

- Deploy Agent
- Challenge Lab

Activities

- GENAI129 - Deploy an Agent with Agent Development Kit (ADK): Challenge Lab (90 mins)