

AWS Partner Day - Developing Generative AI Applications in AWS

Duration: 2 Days **Course Code: GKAWS-DGAA**

Overview:

Learn to build and customize AI solutions by using Amazon Bedrock programmatically

In this advanced two-day course, software developers learn to build and customize AI solutions by using Amazon Bedrock programmatically. Through hands-on exercises and labs, participants will invoke foundation models through Amazon Bedrock APIs, implement Retrieval Augmented Generation (RAG) patterns with Amazon Bedrock Knowledge Bases and develop AI agents with tool integration.

The course focuses on the practical implementation of prompt engineering techniques, responsible AI practices with Amazon Bedrock Guardrails, open-source framework integration, and architectural patterns for real-world business application.

Updated April 2026

Target Audience:

This course is intended for Software developers.

Objectives:

- After this course participants should be able to:
- Define the importance of generative AI and explain its potential risks and benefits
- Discuss the technical foundations and key terminology for generative AI
- Recognize the benefits and use cases of Amazon Bedrock
- Describe the basic functions, types, and various use cases of foundation models
- Define prompt engineering and apply general best practices when interacting with FMs
- Describe Amazon Bedrock foundation models, inference parameters, and key Amazon Bedrock APIs
- Describe architecture patterns that can be implemented with Amazon Bedrock for building useful generative AI applications
- Describe how to integrate LangChain with large language models (LLMs), prompt templates, chains, chat models, text embeddings models, document loaders, retrievers, Agents for Amazon Bedrock
- Build and test several examples of use cases that employ various Amazon Bedrock models, LangChain, and the Retrieval Augmented Generation (RAG) approach

Prerequisites:

We recommend that attendees of this course have:

- Completed the Generative AI Essentials AWS instructor-led course
- Intermediate-level proficiency in Python
- Familiarity with AWS Cloud

Testing and Certification

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Follow-on-Courses:

No recommendation

Content:

Day 1

Module 1: Exploring Components of Generative AI Applications on AWS

- Understanding generative AI concepts
- Identifying AWS generative AI stack components
- Designing generative AI application components

Module 2: Programming with Amazon Bedrock

- Guiding model response generation
- Using Amazon Bedrock programmatically
- Hands-on lab: Develop with Amazon Bedrock APIs
- Hands-on lab: Develop Streaming Patterns with Amazon Bedrock APIs

Module 3: Applying Prompt Engineering for Developers

- Introducing prompt engineering
- Introducing prompt techniques
- Optimizing prompts for better result

Module 4: Using Amazon Bedrock APIs in Common Architectures

- Implementing architecture patterns with Amazon Bedrock APIs
- Exploring common use cases
- Adding conversational memory to extend context
- Hands-on lab: Develop Conversation Patterns with Amazon Bedrock APIs

Day 2

Module 5: Customizing Generative AI Responses with RAG

- Implementing Retrieval Augmented Generation (RAG)
- Using Amazon Bedrock Knowledge Bases
- Hands-on lab: Develop Retrieval Augmented Generation (RAG) Applications with Amazon Bedrock Knowledge Base

Module 6: Integrating Open Source Frameworks with Amazon Bedrock

- Invoking a foundation model in Amazon Bedrock using LangChain
- Using LangChain for context-aware responses
- Hands-on lab: Develop a Generative AI Application Pattern using Open Source Frameworks and Amazon Bedrock Knowledge Bases

Module 7: Evaluating Generative AI Application Components

- Evaluating application components
- Evaluating model output
- Evaluating RAG output
- Optimizing latency and cost
- Hands-on lab: Evaluating Retrieval Augmented Generation (RAG) Applications

Module 8: Implementing Responsible AI

- Understanding responsible AI
- Mitigating bias and addressing prompt misuses
- Using Amazon Bedrock Guardrails
- Hands-on lab: Securing Generative AI Applications Using Bedrock Guardrails

Module 9: Using Tools and Agents in Generative AI Applications

- Using tools
- Understanding AI agents
- Understanding open source agentic frameworks
- Understanding agent interoperability

Module 10: Developing Amazon Bedrock Agents

- Implementing Amazon Bedrock Flows
- Designing Amazon Bedrock Agents
- Developing Amazon Bedrock Inline Agents
- Designing multi-agent collaboration
- Using Amazon Bedrock AgentCore
- Hands-on lab: Developing Amazon Bedrock Agents Integrated with Amazon Bedrock Knowledge Bases and Guardrails

Additional Information:

Official course book provided to participants

Further Information:

For More information, or to book your course, please call us on 0800/84.009

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