Developing applications with google cloud

Course Objective:

1. Understand and apply best practices for cloud-native application development.
2. Evaluate and select appropriate data storage options for application data.
3. Implement federated identity management for secure access to application resources.
4. Develop loosely coupled application components or microservices.
5. Integrate application components and data sources effectively.
6. Utilize debugging, tracing, and monitoring techniques for application reliability.
7. Perform repeatable deployments using containers and deployment services.
8. Choose suitable application runtime environments, initially utilizing Google Kubernetes Engine and transitioning to Google App Engine flexible environment for simplified management.

Course Outcome:

1. Apply best practices for secure, scalable, and intelligent cloud-native application development.
2. Select optimal data storage solutions based on application requirements.
3. Ensure secure access to application resources through federated identity management.
4. Build modular application components for enhanced scalability and maintainability.
5. Seamlessly integrate application components and data sources for efficient interaction.
6. Ensure application reliability and performance through effective debugging and monitoring.
7. Streamline deployment processes with containerization and deployment services.
8. Optimize application runtime environments for simplified management and scalability.

Course Syllabus:

1	Google Cloud Fundamentals: Core Infrastructure
	• Identify the purpose and value of Google Cloud products and services • Define how infrastructure is organized and controlled in Google Cloud • Explain how to create a basic infrastructure in Google Cloud • Select and use Google Cloud storage options
2	Getting Started With Application Development
	• Describe best practices for cloud-native application development • Differentiate between data storage options for various types of application data • Implement a solution for storing non-relational application data in Datastore

● Implement a storage solution for objects (binary and large files) using Cloud Storage	
3	Securing and Integrating Components of your Application
● Build intelligent applications using pre-trained machine learning APIs ● Implement a serverless application using Cloud Functions ● Implement federated identity management using Firebase authentication ● Implement a loosely coupled architecture using Pub/Sub as a messaging platform	
4	App Deployment, Debugging, and Performance
● Deploy applications using Cloud Build, Container Registry, and Terraform ● Differentiate between compute options for your application ● Debug, monitor, and troubleshoot your application using Google Cloud's operations suite	