

Day - 1

- **Introduction to Agent-Based Systems and IBM Bee Agent Framework**

- Understanding Agent-Based Systems (ABS) and their role in automation.
- Overview of the IBM Bee Agent Framework architecture.
- Key features, benefits, and use cases.
- Hands-On Lab: Setting up the Bee Agent Framework environment.

- **Bee Agent Framework Essentials**

- Core components: Agents, workflows, and task management.
- Framework setup and configuration.
- Agent lifecycle: Creation, management, and termination.
- Hands-On Lab: Configuring and running your first agent.

- **Designing and Developing Agents**

- Defining agent capabilities and roles.
- Building agents with Python and Bee SDK.
- Implementing communication protocols for task allocation.
- Hands-On Lab: Developing an agent to perform a basic workflow.

- **Automating Complex Workflows**

- Workflow design principles for multi-agent environments.
- Using the Bee Agent Framework to create dynamic task pipelines.
- Error handling and task recovery mechanisms.
- Hands-On Lab: Automating a multi-step workflow with agents.

- **Integrating External Systems**

- Extending agent capabilities with API integrations.
- Authentication, security, and data exchange.
- Practical examples of third-party API connections.
- Hands-On Lab: Integrating an agent with a RESTful API.

- **Scaling and Optimizing Agent Applications**

- Strategies for scaling agent-based systems.
- Monitoring agent performance using IBM Cloud tools.
- Cost optimization techniques.
- Hands-On Lab: Deploying and scaling a Bee Agent Framework application on IBM Cloud.

- **Course Review and Certification Preparation**

- Recap of key concepts and practical takeaways.
- Discussion on advanced use cases and real-world challenges.
- Mock certification exam and Q&A.
- Hands-On Lab: Exam preparation with practice questions and troubleshooting scenarios.