CompTIA AI Agent Essentials

Overview

CompTIA AI Agent Essentials is a practical, hands-on training designed to help professionals understand how AI agents work, where they can add value, and how to use them responsibly in workplace environments.

Participants will learn the fundamental differences between AI agents, traditional chatbots, generative AI tools, and rule-based automation, and identify when an agentic approach is appropriate. The course then progresses into designing structured agent workflows, controlling agent autonomy and tool usage, managing context, memory and knowledge, and implementing appropriate safety controls and human oversight.

Through workplace scenarios and practical exercises, participants will also learn how to test, evaluate and monitor AI agent performance, identify potential failures, and make informed decisions about the adoption of agent-based solutions. The training does not require coding or prior experience in building AI agents.

Duration

7 Hours

Learning Outcomes

By the end of the training, participants will be able to:

- Explain the fundamentals of AI agents and differentiate them from traditional chatbots, generative AI tools and simple automation.
- Identify and design appropriate AI agent use cases by converting real-world business activities into structured, controllable agent workflows.
- Manage agent behaviour and capabilities by applying appropriate instructions, autonomy levels, tools, APIs, context, memory and knowledge.
- Evaluate and govern AI agents responsibly by applying guardrails, human oversight, least-privilege principles, testing and performance monitoring.

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Course Objectives

The course aims to enable participants to:

- Build foundational understanding of agentic AI and recognise situations where an AI agent provides greater value than conventional AI tools or automation.
- Transform business processes into agent-ready workflows by breaking complex activities into tasks, decisions, reasoning steps, actions and expected outputs.
- Design controlled AI agent interactions by determining appropriate levels of autonomy, tool access, instructions, context, memory and knowledge.
- Apply responsible AI agent practices including guardrails, human-in-the-loop controls, least-privilege access, testing, monitoring and failure identification.

Target Audience

This course is suitable for non-technical and lightly technical professionals who need to understand, evaluate, implement or work alongside AI agents. CompTIA specifically identifies product, operations, analytics and IT-adjacent professionals as relevant audiences.

- Business professionals and knowledge workers
- Operations and process improvement teams
- Business analysts
- Data and analytics professionals
- Product managers and product teams
- IT and digital transformation teams
- Project managers

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OUTLINE

Module	Topic Coverage
Module 1 — Introduction to AI Agents	• What is an AI agent? • Characteristics of an AI agent • Anatomy of an AI agent system • AI agents vs traditional chatbots • AI agents vs generative AI prompts • AI agents vs rule-based automation • Examples of agentic systems in the workplace • Activity: Identify the components of an AI agent
Module 2 — Selecting the Right AI Agent Use Case	• Understanding agentic approaches • When an agent is appropriate • When an agent is not appropriate • Chat → light agent → full agent • Reasoning vs deterministic logic • Identifying suitable workplace use cases • Activity: Choose the appropriate AI approach for different business scenarios
Module 3 — Turning Work into Agent Workflows	• Making work "legible" to an AI agent • Breaking complex tasks into smaller steps • Inputs, actions, decisions and outputs • Designing structured workflows • Reasoning and decision points • Deterministic rules vs AI reasoning • Creating controllable and checkable workflows • Activity: Convert a real workplace process into an agent workflow
Module 4 — Controlling Agent Behaviour & Actions	• Agent instructions • Context and prompt design • Levels of agent autonomy • Controlling what an agent can decide • Tools and external capabilities • APIs and external systems • Tool permissions and access • Risks associated with excessive autonomy • Activity: Determine the appropriate autonomy level and tools for an agent

CompTIA AI Agent Essentials

Module 5 — Agent Memory & Knowledge	• Context vs memory • Short-term state • Long-term memory • Knowledge sources • Information retrieval • What should an agent remember? • What should an agent discard? • Data minimisation considerations • Activity: Decide what information an agent should retain
Module 6 — Safe, Secure & Responsible Agents	• Why safety is a design decision • Agent guardrails • Validation and restrictions • Least-privilege principle • Permission management • Human-in-the-loop controls • Human review points • Privacy, accountability and trust • Activity: Design safety controls for a high-risk agent scenario
Module 7 — Testing, Evaluating & Monitoring Agents	• Evaluating agent outputs • Expected vs actual results • Identifying agent errors • Diagnosing workflow problems • Monitoring agent behaviour • Performance signals • Identifying uncertainty • Recognising potential failures • Communicating agent limitations • Continuous improvement • Activity: Evaluate and improve an AI agent based on simulated performance