

Agentic Software Engineering using GitHub Copilot (GHAGENTS)

ID GHAGENTS Price CHF 1,990.—(excl. VAT) Duration 4 days

Who should attend

- Software engineers and developers looking to amplify productivity with AI agents
- Solution architects exploring AI-assisted design and code generation
- Technical leaders evaluating how agentic workflows enhance team velocity
- DevOps engineers applying AI to CI/CD, IaC, and cloud automation

Prerequisites

- Solid experience with software development and version control (Git/GitHub)
- Basic familiarity with cloud concepts (Azure or similar)
- A GitHub Copilot license is required — this is a bring-your-own-license class

Course Content

Module 1: GitHub Copilot Fundamentals

- GitHub Copilot Introduction
- Selecting Models
- AI Assisted Coding
- Slash Commands & Agent Controls
- The /init and /fork Slash Commands
- Context Variables
- Pull Requests & Code Reviews
- Management and Settings

Module 2: GitHub Copilot Artifacts & Tools

- Understanding and Shaping GitHub Copilot's Context Window
- Copilot Instructions & Prompt Files
- Model Context Protocol Essentials
- Skills & Custom Agents
- GitHub Copilot- & Agent-scoped Hooks
- Agent Debug Panel
- Maintaining and optimizing Copilot artifacts
- Setup GH Copilot in a greenfield / brownfield repo

Module 3: Planning & Spec-Driven Development

- Planning: Why It Matters in Agentic Development
- Planning Approaches
- Stepwise Planning
- Feedback Loop
- What are Specs
- Spec-Driven Development Benefits
- Spec Libraries Overview

Module 4: Creating & Managing Skills

- Skill Scoping: User, Repo, and Agent Level
- Adding Skills from Public Skill Resources
- Crafting Custom Skills
- Testing and Validating Skill Routing
- Composing Skills using Reference Skills
- Upgrading & Modernization Skills

Module 5: Second Brain & Continuous Learning

- Second Brain Concepts for Agentic Development
- Copilot Memory: User, Session and Repo Scope
- Hook-driven Knowledge Capture
- Agent Learning Loop
- Creating Skills from Conversation
- Enhancing Skills from recorded Conversations
- Automatic Skill Tuning
- Self-Improving Agent Workflows

Module 6: Consuming & Designing MCP Tools

- MCP Types: Remote, Local, Extensions & Custom
- Integrating existing MCP Servers
- Consuming Databases using MCP
- Implementing MCP Servers and wrapping REST APIs
- Designing MCP Apps
- MCP Authentication: OAuth, API Keys, and Tokens
- MCP Server Hosting and Deployment
- MCP Server Sandboxing

Module 7: Implementing Custom Agents

- Image & binary support for agents
- Agentic Browser Automation
- Docs Agent: Auto-Documentation and Commenting
- Frontend Agent: UI Code Generation from Design Specs
- AI Specialist Agent: Implementing a Domain-Specific

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Expert Agent

- Backend Agent: API Implementation from OpenAPI Specs
- Testing Agent: Generating Unit and Integration Tests

Module 8: Bundling & Sharing Artifacts using Plugins

- What is a GitHub Copilot Plugin?
- Plugin Structure & Manifest
- Bundling Skills, Hooks, and MCPs into Plugins
- Publishing and Sharing Plugins
- Installing and Managing Third-Party Plugins

Module 9: Implementing Agentic Coding

- Using Local Agents and Agent Mode
- Interrupting and Redirecting Running Agents
- Permissions & Autopilot Mode
- Delegating Tasks to Cloud Agents
- Using Background (Copilot CLI) Agents
- Agent Permissions & Approval Controls
- Multi Agent Orchestration & Hand-off Patterns
- Agent Harness Pattern

Module 10: GitHub Copilot CLI

- GitHub Copilot CLI
- Copilot CLI steering + permissions
- Running tasks autonomously and in parallel
- Business Case: HR Document Updates Automation
- Scripting Copilot CLI
- GitHub Agentic Workflows

Module 11: Copilot SDK & Automation

- GitHub Copilot SDK
- Session & Context Management
- Tool & Function Calling
- Custom Agent Composition
- Streaming Responses
- Testing Agentic Applications
- Building an Agent Harness with the Copilot SDK

Module 12: Agentic DevOps & Deployment

- Automation using Azure CLI
- Azure Developer CLI (azd) agentic mode
- Infrastructure as Code (IaC) - Bicep & Terraform
- Agentic Deployment using GitHub Actions
- Implementing a DevOps Agent for CI/CD Automation

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Training Centres worldwide



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