

GitHub Copilot: AI-Powered Coding Companion

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This course introduces GitHub Copilot, an AI-powered coding assistant built on OpenAI Codex. Participants will learn how to integrate Copilot into their workflow, use effective prompts, and maintain code quality and security. Hands-on labs simulate real-world tasks to build confidence in using AI as a productivity tool.

Pre-requisites:

- Comfortable with at least one programming language (Python, JavaScript, or TypeScript preferred)
- Familiarity with VS Code
- Basic knowledge of Git and GitHub

Duration: 2 Days

Module 1: Writing Code with Copilot

- Brief introduction to Copilot
- Copilot settings walkthrough
- Inline suggestions vs full function generation
- Writing from scratch vs editing existing code
- Prompt-driven completions (comments, docstrings, natural language)

Lab: Implement a feature (e.g., currency converter or to-do list) using Copilot suggestions

Module 2: Prompt Engineering for Developers

- Writing smart prompts for smarter completions
- Controlling scope: comments, naming, typing hints
- Copilot's limitations and how to guide it

Lab: Rebuild a buggy function by prompting Copilot through structured comments

Module 3: Copilot in Real-World Scenarios

- Writing unit tests with Copilot

- Refactoring legacy functions
- Documentation and comments generation

Lab: Refactor an existing repo with outdated code and add tests with Copilot

Module 4: Working Across Files & Projects

- How Copilot understands context across files
- When it fails: isolation, dependencies, and module issues

Lab: Add a new feature to a multi-file project using Copilot

Module 5: Security, Ethics & Compliance

- Where Copilot's code comes from
- Code suggestions and licensing risks
- Avoiding sensitive data leaks and insecure suggestions
- Company policies on AI coding assistants

Module 6: Customizing Copilot Experience

- GitHub Copilot Labs
- Feature toggles and fine-tuning
- Disabling Copilot by file type, language, or context
- Copilot Chat (for Enterprise users)

Capstone Lab

- A final project combining skills from previous labs, using Copilot to solve a real-world problem