

AI+ Vibe Coding Practitioner™ (AP 111)

Course Duration: 8 Hours

TOC

Module 1: Introduction to Vibe Coding & AI Tools

- 1.1 What is Vibe Coding?
- 1.2 Evolution of AI in Software Development – Low Code vs No Code vs Vibe Coding
- 1.3 Overview of Common AI Coding Tools by Functionality
- 1.4 SDLC for a Vibe Coding Product
- 1.5 Hands-on Lab: Familiarizing Learners with Multiple AI Coding Tools
- 1.6 Case Studies

Module 2: Prompting for Code – Basics & Best Practices

- 2.1 Anatomy of a Good Prompt
- 2.2 Prompt Types – Instructive, Descriptive, Iterative
- 2.3 Prompting Patterns – Zero-Shot, Few-Shot, Chain-of-Thought
- 2.4 Hands-on Lab: Practice Zero-Shot, Few-Shot, and Chain-of-Thought Prompting
- 2.5 Use-Case 1: Creating a Python Calculator
- 2.6 Use-Case 2: Optimizing AI-generated Code Using Different Prompt Types

Module 3: Debugging & Testing via AI

- 3.1 Reviewing and Refining AI-generated Code
- 3.2 Prompting for Bug Fixes and Test Coverage
- 3.3 Using AI-generated Unit Testing
- 3.4 Detecting Hallucinations and Unsafe Code
- 3.5 Hands-on Lab: AI-Assisted Debugging and Unit Testing
- 3.6 Activity Section

Module 4: Building a Simple Full-Stack App with Prompts

- 4.1 Planning the App: Frontend + Backend

- 4.2 Using IDEs and Code Generators to Scaffold Code
- 4.3 Connecting Components Using Natural Language
- 4.4 Deploying and Testing the MVP in Simulated Environment
- 4.5 Hands-on Lab: Building and Connecting the Frontend and Backend for Contact Form Submission
- 4.6 Hands-on Lab: Building a Standalone Desktop Calculator Application Using Tkinter
- 4.7 Hands-on Assignment 1: Task Management System – Full-Stack Development Using Prompts

Module 5: Code Ethics, Security, and AI Limits

- 5.1 AI Limitations and Biases
- 5.2 Prompt Injection and Mitigation Strategies
- 5.3 Data Privacy and Secure Coding
- 5.4 Responsible Use of AI in Production
- 5.5 Hands-on Lab: Build Awareness of AI Limitations and Responsible Practices

Module 6: Capstone Project – Prompt-Driven App

- 6.1 Apply All Learned Skills in a Real-World Project
- 6.2 Collaborate and Iterate Using AI Tools
- 6.3 Demonstrate End-to-End Development Using Prompts
- 6.4 Capstone Project Use Case: AI-Powered To-Do List Application
- 6.5 Capstone Project Use Case: AI-Powered Note-Taking Desktop App
- 6.6 Assignments