

AI-Assisted Coding: Boosting Developer Productivity and Efficiency Courseware (AIAC101)

Duration: 03 days (24 hours)

Course Objectives:

AI-Assisted Coding: Boosting Developer Productivity and Efficiency is a comprehensive course for trainers and training companies, equipping learners with AI-powered coding skills using large language models like ChatGPT. Covering **AI-assisted HTML, CSS, JavaScript, JSON, XML, SQL, and Python**, the course provides hands-on experience in coding, debugging, optimizing, and integrating APIs. Learners will explore structured data management, query optimization, and scalable development while leveraging AI for efficiency. This program empowers trainers to deliver impactful, hands-on education, preparing developers to harness AI for modern software development.

Required Prerequisites

- Basic familiarity with programming concepts and syntax.
- Understanding of foundational web development (HTML, CSS, and JavaScript).
- Experience with at least one programming language is recommended.

Useful Prerequisites

Prior exposure to SQL, Python, or XML will be helpful.

Table of Content

1. Overview of Artificial Intelligence and Large Language Models

- A. Overview of Artificial Intelligence and Large Language Models
- B. Large Language Models: Challenges and Risks
- C. ChatGPT Overview and Use Cases
- D. How ChatGPT Helps Developers Write Code
- E. Prepping a ChatGPT Thread
- F. What to Expect in the Course
- G. Getting Started with ChatGPT (Exercise)

2. Ai Assisted HTML

- A. Creating the Shell of an HTML Page (Exercise)
- B. Creating a Table (Exercise)

- C. Creating a Nested List (Exercise)
- D. Generating Images with ChatGPT
- E. Creating a Series of Images (Exercise)
- F. Creating a Form (Exercise)
- G. Debugging a Poorly Structured HTML Page (Exercise)
- H. ChatGPT Can Analyze Images
- I. Recommended Practice (Exercise)

3. AI-Assisted CSS

- A. Creating a Basic CSS File (Exercise)
- B. Creating a Responsive Layout (Exercise)
- C. Creating CSS Animations (Exercise)
- D. Optimizing CSS with ChatGPT
- E. Optimizing and Commenting CSS (Exercise)
- F. Recommended Practice (Exercise)

4. AI-Assisted JavaScript and JSON

- A. Creating a JavaScript Module (Exercise)
- B. Improving JavaScript Code (Exercise)
- C. Validating a Form (Exercise)
- D. Making Use of an API (Exercise)
- E. Recommended Practice (Exercise)

5. AI-Assisted XML

- A. Generating a Simple XML File (Exercise)
- B. Validating an XML File (Exercise)
- C. Transforming XML with XSLT (Exercise)
- D. Converting XML to JSON (Exercise)
- E. Recommended Practice (Exercise)

6. AI-Assisted SQL

- A. Analyzing SQL Scripts and Entity Relationship Diagrams (Exercise)

- B. Converting Natural Language Requirements into SQL (Exercise)
- C. Recreating SQL Reports (Exercise)
- D. Explaining Query Execution Plans (Exercise)
- E. Recommended Practice (Exercise)

7. AI-Assisted Python

- A. Setting Up and Using Google Colab
- B. Writing a Python Module (Exercise)
- C. Debugging and Optimizing Python (Exercise)
- D. Making Use of an API (Exercise)
- E. Creating a Python Script with File I/O (Exercise)
- F. Recommended Practice (Exercise)