"Certified Entry-Level Web Developer Course with Python"

Course Introduction:

The "PCEW – Certified Entry-Level Web Developer with Python" course is designed to equip aspiring web developers with the fundamental skills necessary to build robust web applications using Python. Over the span of five days, participants will explore core web development concepts, Python programming, and essential tools and frameworks. By the end of the course, learners will have a solid foundation to kickstart their journey in web development, capable of creating interactive and dynamic websites.

Day 1: Introduction to Web Development and Python

• Overview of Web Development: Understand the basics of how the web works, including client-server architecture and the role of web browsers.

• Setting Up the Development Environment: Learn to install and configure necessary tools such as Python, code editors, and version control systems like Git.

• Python Fundamentals: Delve into Python syntax, data types, and control structures to lay a solid programming foundation.

• Introduction to HTML and CSS: Explore the building blocks of web pages, focusing on how HTML structures content and CSS styles it.

Day 2: Advanced Python Programming for Web Development

• Functions and Modules in Python: Master writing reusable code with functions and organizing code with modules for better maintainability.

• Working with Data Structures: Gain proficiency in using lists, tuples, dictionaries, and sets for efficient data manipulation.

• File Handling and Exceptions: Learn to read from and write to files, and handle exceptions to build robust applications.

• Introduction to Python Libraries: Get familiar with popular Python libraries like Flask and Django that aid in web development.

Day 3: Building Dynamic Web Applications

• Introduction to Flask: Start building web applications using Flask, a lightweight Python web framework.

• Routing and URL Management: Understand how to manage URLs and handle different routes in Flask applications.

• Templating with Jinja2: Learn to create dynamic web pages using the Jinja2 templating engine to integrate Python with HTML.

• Handling Forms and User Input: Explore methods for receiving and processing user input in web applications securely.

Day 4: Database Integration and APIs

• Introduction to Databases: Learn the basics of relational databases and how to use SQL for data manipulation.

• Connecting to Databases with SQLAlchemy: Use SQLAlchemy in Flask to interact with databases and perform CRUD operations.

• Building RESTful APIs: Understand the principles of REST and how to build APIs that allow interaction with web applications.

• Consuming APIs: Learn to integrate external APIs into your applications to expand functionality and data access.

Day 5: Deployment and Project Development

• Introduction to Deployment: Explore different deployment options for web applications and the basics of cloud services.

• Deploying Applications with Heroku: Learn to deploy your Flask applications to the cloud using Heroku.

• Building a Capstone Project: Apply all learned skills to develop a simple but comprehensive web application from scratch.

• Course Review and Next Steps: Recap key concepts, discuss resources for further learning, and outline potential career paths in web development.

Each day is structured to build upon the previous one, ensuring a gradual and comprehensive learning experience. By the end of the course, participants will be equipped with both theoretical knowledge and practical skills essential for entry-level web development roles.