

"Certified Python Web Developer: Build Dynamic Applications in 6 Days"

Course Introduction:

The PCAW – Certified Associate Web Developer with Python course is designed to equip aspiring web developers with the fundamental skills and knowledge necessary to create dynamic, interactive, and responsive web applications. This intensive 6-day course will guide participants through the essential aspects of web development using Python, covering everything from basic programming concepts to advanced web technologies and frameworks. By the end of the course, participants will have built a comprehensive understanding of web development processes and be prepared to tackle real-world projects.

Day 1: Introduction to Web Development and Python Basics

- Overview of Web Development

Understand the roles and responsibilities of a web developer, and explore the different components of web applications.

- Introduction to Python Programming

Learn the basic syntax, data types, and operators in Python, and understand its role in web development.

- Setting Up Your Development Environment

Install and configure Python and essential development tools, including IDEs and version control systems.

- Writing Your First Python Program

Create and execute a simple Python script to familiarize yourself with the development workflow.

Day 2: Python for Web Development

- Control Structures in Python

Explore decision-making constructs and loops, which are essential for building dynamic web applications.

- Functions and Modules

Understand how to define and use functions and modules to organize and reuse code effectively.

- Introduction to Object-Oriented Programming (OOP)

Learn the principles of OOP in Python, including classes and objects, to build more robust applications.

- Error Handling and Debugging

Develop skills to identify, handle, and debug errors in your Python code to ensure smooth application performance.

Day 3: Web Technologies and Frameworks

- Introduction to HTML and CSS

Discover the building blocks of web pages and learn how to structure content and style it with CSS.

- Basics of JavaScript

Understand the role of JavaScript in web development and its integration with HTML to create interactive features.

- Introduction to Flask Framework

Explore Flask, a micro web framework in Python, to learn how to build simple web applications.

- Building a Basic Web Application with Flask

Create a basic web application using Flask to understand routing, request handling, and response rendering.

Day 4: Advanced Web Development Concepts

- Working with Templates in Flask

Learn how to use templates in Flask to separate business logic from presentation and create dynamic web pages.

- Handling Forms and User Input

Understand how to handle user input through forms and validate data securely in web applications.

- Introduction to Databases

Explore the basics of databases, including SQL, and learn how to integrate a database with a Flask application.

- Building a CRUD Application

Develop a simple CRUD (Create, Read, Update, Delete) application to solidify your understanding of database integration.

Day 5: Enhancing Web Applications

- Working with APIs

Learn how to consume and integrate third-party APIs to enhance the functionality of your web applications.

- User Authentication and Authorization

Understand the principles of user authentication and authorization to implement secure login systems.

- Deploying Web Applications

Explore the different methods and best practices for deploying Python web applications to live environments.

- Optimizing Web Application Performance

Gain insights into optimizing web applications for performance, including caching strategies and code efficiency.

Day 6: Capstone Project and Certification Preparation

- Planning and Designing a Web Application

Apply the skills learned by planning and designing a comprehensive web application as a capstone project.

- Implementing the Capstone Project

Develop your capstone project, incorporating all the features and best practices covered throughout the course.

- Testing and Debugging the Capstone Project

Conduct thorough testing and debugging to ensure your web application is functional and robust.

- Review and Certification Preparation

Review key concepts and prepare for the PCAW certification exam to solidify your understanding and readiness.

Conclusion:

The PCAW – Certified Associate Web Developer with Python course provides a solid foundation in web development with Python, equipping learners with the skills necessary to pursue a career in this dynamic field. With a combination of theoretical knowledge and practical experience gained through this course, participants will be well-prepared to create and deploy professional web applications.