COURSE SYLLABUS

Python Developer Certificate

Learn the skills needed to become a Python Developer, from Python programming fundamentals to web development with Django and Django REST. Develop in-demand skills with Django, a popular Python web framework used for back end web programming, and build a portfolio of projects under the guidance of the lead instructor.

> Group classes in NYC and onsite training is available for this course.
> For more information, email corporate@nobledesktop.com or visit:
> https://www.nobledesktop.com/certificates/python-developer

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Course Outline

This package includes these courses

- Python Programming Bootcamp (30 Hours)
- Python Web Development with Django (60 Hours)
- Python Developer Capstone Projects (Self-Paced) (0 hours)

Choose two of the classes below as free electives (contact us after registration).

- Python for Data Science Bootcamp
- Python for AI: Create AI Apps with Flask & OpenAI
- Python Data Visualization & Interactive Dashboards
- Python Machine Learning Bootcamp

Python Programming Bootcamp

Learn Python programming from the ground up, covering essential concepts, real-world applications, and coding best practices. This course prepares you to tackle technical challenges and build a portfolio of Python projects.

- Master Python fundamentals, including variables, data types, loops, and functions.
- Develop logical programming skills using conditionals, indexing, and slicing techniques.
- Work with file handling operations such as reading, writing, and appending to text files.
- Explore computer science fundamentals, including Big-O notation and sorting algorithms.
- Gain hands-on experience with object-oriented programming (OOP) to build scalable applications.
- Use Git and GitHub to manage projects and create a professional coding portfolio.

Python Web Development with Django

Learn how to build and deploy web applications using Django, a powerful Python web framework. This course covers back-end development, API creation, and automation techniques for scalable applications.

- Set up Django projects and work with URL dispatchers, templates, and database models.
- Develop full-stack web applications using Django's MVC architecture and generic views.
- Implement authentication, user management, and secure API endpoints with Django REST.
- Automate tasks with Django, including background processes and scheduled jobs.
- Work with APIs, including building and consuming RESTful web services.
- Deploy Django applications and APIs to production environments for real-world use.

Python Developer Capstone Projects (Self-Paced)

Python Web Development with Django Capstone

- Analyze structured datasets (e.g., Stack Overflow Developer Survey) to identify global tech salary trends influenced by factors like location, job role, experience level, and remote work.
- Use pandas for data cleaning and preprocessing (handling missing values, currency conversions, and outliers), and visualize key insights with matplotlib/seaborn charts, including salary comparisons and remote versus on-site trends.
- Develop an interactive Django web application featuring dynamic salary filtering, interactive charts, and dashboards, using Django models, views, templates, and Bootstrap for frontend styling.

Python for AI Capstone *(Choose one of two)*

- AI Chat Assistant: Build a Flask and JavaScript-powered AI chat assistant embedded in a live website, integrating OpenAI's API to provide context-aware responses about products or services with client-side session memory.
- Collectibles Identification Web App: Develop an interactive Flask-based web app allowing users to upload images of collectibles, utilizing OpenAI's API for item identification, metadata generation, and dynamic session-based item logging.
- Prepare a professional presentation demonstrating your app's user flow, technical integration (Flask, JavaScript, OpenAI), prompt engineering strategies, insights, limitations, and opportunities for future improvements.

See examples of Python capstone projects from students.