COURSE SYLLABUS

Data Analytics & AI Certificate

Live instruction: Learn data analysis, SQL, visualization, machine learning, and AI application development through projects in Excel, Python, and Tableau.

> Group classes (NYC) and onsite training are available for this course.
> For more information, email corporate@nobledesktop.com or visit:
> https://training-nyc.com/certificates/data-analytics-ai



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Course Outline

This package includes these courses

- Excel for Data Analytics (18 Hours)
- Data Analytics Foundations (12 Hours)
- Tableau Bootcamp (12 Hours)
- SQL Bootcamp (PostgreSQL) (18 Hours)
- Python for Data Science Bootcamp (30 Hours)
- Python Machine Learning Bootcamp (30 Hours)
- Python Data Visualization & Interactive Dashboards (30 Hours)
- Python for Automation (6 Hours)
- Python Machine Learning Advanced (30 Hours)
- Python for AI: Create AI Apps with Flask & OpenAI (30 Hours)
- Data Science Capstone Projects (Self-Paced) (0 hours)

Excel for Data Analytics

- Learn fundamental database and statistical functions
- Use Pivot Tables and lookup functions (including VLOOKUP)
- Create simple macros to speed up your workflow

Data Analytics Foundations

- Fundamentals of data analytics and statistics
- How to use data for forecasting & decision-making
- How businesses use data analytics in their processes

Tableau Bootcamp

- Learn to identify datasets to connect to, explore, analyze, filter, and structure your data

- Create a variety of maps to represent geographic data
- Build actions to control your visualizations within your sheets and dashboards

SQL Bootcamp (PostgreSQL)

- Explore information stored in a database (tables, columns, rows, etc.) using the graphical interface of DBeaver (a popular free database app)
- Write SQL queries to retrieve data from tables in a database
- Combine information from multiple tables with JOIN statements
- Filter data, group it, and sort it to extract the specific info you need
- Advanced techniques like Subqueries, String Functions, and IF-Else logic with CASE
- How to use Views and Functions with parameters instead of directly querying tables

Python for Data Science Bootcamp

Learn the fundamentals of Python and object-oriented programming in this 5-day intensive course. You'll gain a solid understanding of Python, with a strong emphasis on using libraries and frameworks for data science.

Python Machine Learning Bootcamp

Build and evaluate machine learning models in Python. Practice preparing data, selecting features, and comparing model performance.

Python Data Visualization & Interactive Dashboards

- Plan & present a data story
- Gather and manipulate data from different sources
- Find data stories through exploratory data analysis
- Manipulate data with NumPy and pandas.
- Use advanced Python visualization libraries Plotly and Dash
- Build a dashboard
- Apply the rules of effective dashboard design to create professional data science solutions
- Go live with your project & deploy the dashboard on a live server

Python for Automation

Learn Python web scraping and automation. Write scripts, collect website data, handle errors, and schedule recurring tasks.

Python Machine Learning Advanced

Clean and vectorize text, compare sentiment analysis methods, and build a recommendation system. Combine NLP and Flask in a Movie Recommender App.

Python for AI: Create AI Apps with Flask & OpenAI

- Learn how AI and Python go hand-in-hand

- Work with Python's major AI libraries
- Build & deploy your own AI app

Data Science Capstone Projects (Self-Paced)

Three capstone projects run through this program, each one meant for your portfolio:

Machine Learning & AI Capstone

- Select a structured dataset, clean it, and engineer features from it in order to train machine learning models such as logistic regression and random forest, then evaluate how they perform and present the results in clear visualizations.
- Present your work professionally, laying out the data processing workflow you followed, the modeling techniques you chose, and the insights you uncovered with Python libraries like pandas, scikit-learn, and Matplotlib.

Python for AI Capstone *(Choose One of Two)*

- AI Chat Assistant: Create an interactive chat assistant that lives on a webpage, with Flask and JavaScript handling the OpenAI API integration behind context-aware user interactions.
- Collectibles Identification App: Build a Flask web app that accepts uploaded images of collectible items, calls on OpenAI to identify them and produce descriptive metadata, and displays the logged session history dynamically.

Python Data Visualization Capstone

- Take global CO_2 emissions data together with GDP and population figures, clean and analyze it, and bring out trends and correlations in visualizations made with Matplotlib, seaborn, and plotly.
- Construct a responsive Dash dashboard for exploring the emissions data interactively, one that conveys regional trends, GDP-emission correlations, and emission anomalies clearly.

You work on the capstone projects on your own schedule, returning to the course materials as often as you need in order to check your progress and resolve questions as they come up.

Student work is available to view: examples of data science capstone projects.