COURSE SYLLABUS

# Python Data Science & Machine Learning Bootcamp (Self-Paced)

Master Python for data analysis, machine learning, and automation. Build predictive models, create dynamic dashboards, and unleash the power of data visualization. Launch your career in data science and Python engineering, equipped with Python, NumPy, pandas, and Matplotlib.

Group classes (Live Online) and onsite training are available for this course. For more information, email corporate@nobledesktop.com or visit: https://www.nobledesktop.com/certificates/python-programming-online



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## Course Outline

This package includes these courses

- Python for Data Science Course Online (Self-Paced) (30 Hours)
- Python Machine Learning Bootcamp (30 Hours)
- Python for Automation Course Online (Self-Paced) (6 Hours)
- Python Data Visualization & Interactive Dashboards Online (Self-Paced) (24 Hours)

Choose one free elective. Contact us after registration to select your dates.

- Python for AI Course Online (Self-Paced)
- Python Machine Learning Advanced (Self-Paced)

### Python for Data Science Course Online (Self-Paced)

Unlock the power of Python for data-driven decision-making as you master Python programming fundamentals and dive into data analysis. Acquire essential skills to clean and manipulate data, create insightful visualizations, and perform statistical analysis, all through hands-on projects with real-world datasets.

- Handle different types of data such as integers, floats, and strings
- Control the flow of your programs with conditional statements, loops, and functions
- Reuse and simplify code with object-oriented programming
- Analyze tabular data with NumPy and pandas
- Create graphs and visualizations with Matplotlib
- Make predictions with linear regression, using scikit-learn

### Python Machine Learning Bootcamp

Gain hands-on experience building predictive models using Python in this practical machine learning course, designed to help you understand core algorithms and apply them to real-world data.

- Explore foundational techniques including linear/logistic regression, k-nearest neighbors, decision trees, and random forest
- Understand regression vs. classification problems and when to apply each approach
- Apply cross-validation, train/test splits, and performance metrics to evaluate and refine models
- Use feature engineering to improve accuracy while managing overfitting and bias-variance tradeoffs
- Implement algorithms using Python's core data science libraries: NumPy, pandas, and scikit-learn
- Complete a final portfolio project demonstrating your ability to apply machine learning to real-world problems

## Python for Automation Course Online (Self-Paced)

Learn how to use Python to extract data from websites and write loops for processing large numbers of pages. This course covers HTML and CSS, Python fundamentals, web scraping techniques, data storage, and scheduling.

- Learn Python syntax and how to construct programs and scripts
- Write scripts that automate manual tasks and update Excel files automatically
- Identify and correct common errors in your code
- Schedule your programs to run automatically on a regular basis
- Apply web scraping techniques through real-life exercises and examples

## Python Data Visualization & Interactive Dashboards Online (Self-Paced)

Learn to gather, manipulate, and analyze real-life data in this course, where you'll gain hands-on experience with Python's NumPy and pandas libraries. Develop your data visualization skills using Matplotlib, Seaborn, Plotly, and Dash Enterprise, and complete real-life projects that can be deployed online.

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