

# Python for Data Science Bootcamp (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.

Group classes in Live Online and onsite training is available for this course. For more information, email [onsite@graduateschool.edu](mailto:onsite@graduateschool.edu) or visit: <https://sdfm.graduateschool.edu/courses/python-data-science-online>



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## Course Outline

### Python Fundamentals

#### Data Types & Variables

- Statements & Expressions
- Variables
- Integers & Floats
- Strings

#### Data Structures & Attributes

- Functions & Methods
- Lists
- Indexing & Slicing
- Booleans

### Structuring Programs

#### Complex Data Structures & Control Flow

- Dictionaries
- Conditional Statements
- For Loops
- Creating Functions

#### Packages & Object Oriented Programming

- Classes & Objects

- Modules & Imports
- Packages & Documentation

## Arrays & Dataframes

### Numpy

- Arrays
- Universal Functions
- Boolean Indexing

### Pandas

- Pandas Dataframes
- Pandas Series & dtypes
- Column Manipulation
- Descriptive Statistics

## Analyzing & Visualizing Data

### Data Analysis

- Filtering & Cleaning Data
- Groupby Operations
- Pivot Tables

### Data Visualization

- Plotting with Matplotlib
- Bar Charts
- Scatter Plots
- Histograms
- Customizing Visualizations