PRAGMATIC
INSTITUTE

The difference between successful and unsuccessful companies is whether they are utilizing data and insights effectively to make business and technical decisions. Our expert-led data courses are designed to help organizations leverage data to drive business outcomes through high-impact training. With our experiential-learning based courses, business and data professionals come together to collaborate effectively on business objectives and execute a seamless plan so your most valuable data gets the attention it deserves.

Data Wrangling with Python

Foundational Data Course

Course Timeframe

4-week part-time course. *2 lectures per week.*

Course Delivery

Live online.

Office hours are included for course duration.

Who is This Course For?

- Individuals with a good educational background, professionals within or outside of STEM with experience in data, and have a strong interest in learning how to leverage data science techniques and skills
- Junior business analysts, data analysts, finance analysts, business intelligence analysts, market intelligence analysts, product operations, design operations, project managers, and professionals looking to get a foundational understanding of AI/data science techniques and learn how to leverage AI tools to solve simple to intermediate real-world business problems
- Individuals who want to go beyond the basics of Python, and learn how to prepare the data for analysis and perform simple analysis techniques to secure insights

Who is This Course Not For?

Experienced data science, data analytics, or data engineering professionals

Prerequisites

Basic programming experience or elementary Python knowledge

Course Learning Objectives

Go beyond the basics of Python and learn how to leverage Python and pandas to transform raw data into more readily used formats. Apply basic data analysis techniques to solve real-world problems. This course will prepare you with the necessary tools to ingest, process, and analyze numeric data from a variety of sources.

By The End of This Course, Students Will...

- Load tabular data from multiple sources into pandas from CSV, Excel, and other files
- Filter, aggregate, clean, and merge this data
- Transform large amounts of data with built-in pandas operations and custom Python code
- Perform simple analysis techniques on numeric data
- Output the data in appropriate formats and visualizations

Use Case Examples

- Clean and load historical customer data and compute purchase rates for different segments in preparation for data science analysis
- Identify which products meet multiple and complex criteria using data-wrangling techniques
- Automate the integration of data from multiple sources such as log files, text documents and web pages to extract critical information required for analysis
- Analyze usage and access patterns from website logs

Click here to learn more

Data Wrangling with Python Course Syllabus

Foundational Data Course

An Eight-Module Structured Learning Path

Module 1: Files and Data Formats

Reading and writing files on disk, Python string parsing, persisting Python objects to disk with pickle and JSON

Module 2: NumPy

Understanding benefits of the array data type, indexing and operations on NumPy arrays, saving arrays to disk

Module 3: Introduction to Pandas

Understanding benefits of DataFrames, loading and accessing data in DataFrames, filtering, joining, and sorting data, dealing with missing values

Module 4: Data Transformation and Aggregation with Pandas

Transforming data, grouping and aggregating data, automating data transformations, exporting DataFrames to CSV and Excel

Module 5: Time Series with Pandas

Handling Datetime objects, loading time series data, moving-window functions, forecasting

Module 6: Data Visualization

Overview of available libraries, creating standard plot types with matplotlib, visualizing time series data, exporting plots

Module 7: Introduction to Statistics

Understanding descriptive statistics, correlation, bootstrapping and confidence intervals, common distributions

Module 8: Hypothesis Testing

Defining hypotheses, test statistics, significance levels, likelihood of errors in accepting a hypothesis

Includes hands on exercises and mini project