Pacing Guide

This course introduces and explores Python programming language for data analysis, encouraging creation of solutions and the application of web scraping tools and machine learning models to effectively solve business problems.

Pacing Guide

The pacing guide suggests a weekly structure to pace your completion of the learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow the pacing guide carefully to complete the course in the suggested timeframe. Enjoy your learning experience!

Week	Lessons

Week 1	• Welcome and Introduction
	  ◦ Learning resources
	  ◦ Pacing guide
	
	 • Python Data Science Handbook
	  ◦ Chapter 2 – Introduction to NumPy:
	  ▪ √ Understanding Data Types in Python
	  ▪ √ Computation on NumPy Arrays: Universal Functions
	  ▪ √ Comparisons, Masks, and Boolean Logic
	  ▪ √ Aggregations: Min, Max, and Everything in Between
	
	 • Python Essential Training videos:
	  ◦ √ Chapter 3, Section: Types and Values (30m 15s)
	  ◦ √ Chapter 2, Section: Objects (3m 26s)
	  ◦ √ Chapter 2, Section: Expressions and Statements (2m 38s)
	  ◦ √ Chapter 13, Section: Built-in Functions (14m 53s)
	
	 • Python for Data Science Essential Training video:
	  ◦ √ ~~Chapter 3~~: Basic Math and Statistics (66m 2s)
	  Chapter 5

Week 2	• Python Data Science Handbook ◦ Chapter 3 – Data Manipulation with Pandas: √ ▪ Introducing Panda Objects • Python Essential Training video: √ ◦ Chapter 14 (11m 37s) • Python for Data Science Essential Training videos: ✗ ◦ Chapter 9 – Web-based Data Visualizations with Plotly (46m 4s) √ ◦ Chapter 10 – Web Scraping with Beautiful Soup (31m 51s) • Data Science Foundations: Python Scientific Stack video: √ ◦ Chapter 5, Section: Introduction to Python Packages (2m 10s)
Week 3	• Python Data Science Handbook ◦ Chapter 3 – Data Manipulation with Pandas: √ ▪ Working with Time Series √ ▪ Hierarchical Indexing √ ▪ Data Indexing and Selection √ ▪ Pivot Tables √ ▪ Aggregation and Grouping √ ▪ Handling Missing Data √ ▪ Combining Datasets: Merge and Join ◦ Chapter 4 – Visualization with Matplotlib √ ▪ Histograms, Binnings, and Density • Python Essential Training video: √ ◦ Chapter 12, Section: File I/O (12m 4s) √ ◦ ~~Chapter 3, Section: Types and Values (30m 15s)~~ duplicate

Week 4	• Python for Data Science Essential Training videos: √ ○ Chapter 1 (37m 27s) ? What is the subject ? √ ○ Chapter 2 (61m 21s) ? What is the subject ? √ ○ ~~Chapter 3, Section: Generate Summary Statistics (8m 22s)~~ Duplicate (Inside Chapter 5*) √ ○ ~~Chapter 5, Section: Outlier Analysis (18m 46s)~~ Duplicate (Inside Chapter 5*) • Data Science Foundations: Python Scientific Stack video: √ ○ Chapter 4, Section: Load CSV File (5m 19s)
Week 5	• Python Data Science Handbook √ ○ Chapter 1 – IPython: Beyond Normal Python: ▪ IPython Magic Commands • Chapter 5 – Machine Learning (From Handbook) √ ○ Feature Engineering √ ○ What is Machine Learning? • Python Essential Training videos: √ ○ Chapter 6 - Loops (10m 43s) √ ○ Chapter 7 - Functions (28m 11s) √ ○ Chapter 8 - Structured Data (22m 8s) ○ Chapter 9 - Classes (23m 58s) • Doing Data Science with Python videos: ?? ○ Chapter 4 – Extracting Data (46m 29s) did'nt find resource ○ ~~Chapter 2~~, Section: Why Python for Data Science? (2m 3s) Chapter 1 - Python for Data Science Essential Training Part 2 ?? ○ Chapter 2, Section: Data Science Project Cycle Overview (2m 25s) did'nt find resource

Week 6	• Review • Performance Assessment