COURSE SYLLABUS

Python for Data Analytics

Use Python to obtain, clean and prepare data, then describe, visualize and model it to answer real business questions.

$2,000 per person

20 guided hours plus 2 hours of coaching

On-demand asynchronous training with online support and 2 hours of coaching sessions per course.

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Time	20 guided hours plus 2 hours of coaching sessions
Delivery	On-demand asynchronous training with online support and 2 hours of coaching sessions per course.
Credential	Certificate of completion from We Can Code IT
Who it is for	This course is for analysts, finance and operations staff, and reporting teams who already know some Python and want to replace manual spreadsheet analysis.
Prerequisites	Basic Python: variables, lists, dictionaries, loops and functions (an introductory Python course or equivalent); Comfort with spreadsheets and basic statistics such as averages and percentages
Requirements	Works on Windows, macOS or Linux; Anaconda with Jupyter, pandas, Matplotlib and scikit-learn (free)

About this course

This course teaches the analysis side of data work in Python. You will get data in from files, spreadsheets, databases and web APIs, clean and prepare it, describe it with statistics and show it in clear charts. You finish with simple predictive and classification models, so you can turn a business question into an answer backed by data.

What you will be able to do

- You will be able to load data from CSV, Excel, JSON, a SQL database and a web API into a pandas DataFrame.
- You will be able to clean and prepare data by handling missing values, fixing data types, removing duplicates and merging and reshaping tables.
- You will be able to summarize data with descriptive statistics, groupby, pivot tables and correlation.
- You will be able to build labeled charts with pandas and Matplotlib that a business reader can understand.
- You will be able to train and evaluate a linear regression and a basic classifier with scikit-learn and explain their accuracy and error.

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Syllabus

Module	Hours
1. The analyst's Python setup Anaconda and Jupyter, Notebook habits for analysis, The pandas DataFrame. Lab: You will set up an analysis notebook and explore a first dataset as a pandas DataFrame.	1.5 h
2. Obtaining data CSV, Excel and JSON files, Reading from a SQL database, Pulling data from a web API. Lab: You will bring sales data from a spreadsheet, a database table and a web API into pandas and combine them.	2.5 h
3. Cleaning and preparing data Missing values, Data types and formatting, Duplicates and outliers, Normalization and binning, Merging and reshaping tables. Lab: You will take a messy real-world dataset and produce a clean, analysis-ready table, documenting each fix you make.	4 h
4. Describing data Descriptive statistics, groupby and pivot tables, Correlation, Telling a real difference from noise. Lab: You will summarize performance by region and product and test whether an apparent difference between groups holds up.	3 h
5. Visualizing data Choosing the right chart, Charts with pandas and Matplotlib, Labeling for a business reader. Lab: You will build a small set of labeled charts that answer three questions from your cleaned dataset.	2.5 h
6. Predicting and categorizing Train and test splits, Linear regression for prediction, A basic classifier, Accuracy and error metrics with scikit-learn. Lab: You will predict a numeric outcome with linear regression, sort records into categories with a classifier, and report how well each model performs.	4 h
7. Capstone Framing a business question, End-to-end analysis, Notebook report. Lab: You will answer a business question end to end on a real dataset and present your findings in a short notebook report, then review it with your coach.	2.5 h
Coaching sessions Two hours of one-on-one or small-group coaching, scheduled with your coach.	2 h

Live online or in-person sessions are available for an additional fee. Email admissions@wecancodeit.org for details.

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