

# SYLLABUS

111 DAYS OF CODE  
COMPLETE  
PROFESSIONAL  
PYTHON BOOTCAMP

## DAY 1-15 BEGINNER PYTHON

- Variables in Python
- String Manipulation
- Input and Print Functions
- Variable Naming Rules
- Mathematical Operations in Python
- DataTypes
- Converting types
- Conditionals IF/ELIF/ELSE
- Logical Operators
- Randomisation
- Error Handling
- Functions
- For Loops
- Code blocks and Indentation
- While Loops
- Flowchart Programming
- Positional and Keyword Arguments
- Python Dictionaries and Lists
- Nested Collections
- Returning Functions
- Return vs. Print
- Doc Strings vs. Comments
- Scope and Local/Global Variables
- Debugging Techniques

## Day 16 - 31 INTERMEDIATE PYTHON

- Local Development Environment Setup
- Pycharm Tips and Tricks
- Python Object Oriented Programming
- Creating Classes in Python
- Using External Python Modules/Imports
- Getting / Setting Attributes
- Python Methods
- Class Initialisers
- Module Aliasing
- Optional, Required and Default Parameters
- Event Listeners
- Python Instances and State
- Python Turtle
- Game Development with Python and OOP
- Python Inheritance
- Python Slice Function
- File I/O Reading and Writing to Local Files
- File Directories
- Reading and Writing to CSV
- Introduction to Pandas Framework
- List Comprehensions
- Dictionary Comprehensions

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- Packing and Unpacking Functions in Python
- Creating Desktop GUI Apps with Tkinter
- Strongly Dynamic Typing
- Error Handling and Exceptions
- Try / Except/ Raise
- Working with JSONs
- Local Persistence
- Sending Email with Python and SMTP
- Working with date and time
- Hosting Python Code Online with PythonAnywhere

## Day 32-58 INTERMEDIATE +

- APIs
- Making HTTP Requests with the Requests module
- Sending Parameters with the Request
- APIs with Authentication
- Sending SMS with Python
- Web Scraping with Beautiful Soup
- Browser Automation with Selenium Web Driver
- Automating Tinder
- Automating Twitter
- Automating LinkedIn
- Automating Instagram
- Web Development with Flask
- Command Line
- Python Decorators
- Templating with Jinja 2
- WTForms

## Day 59-80 ADVANCED PYTHON

- Build Your Own REST API with Python
- Build Your Own Blog
- Databases with SQLite
- Dataframe Inspection
- Data Cleaning
- Sorting Values in Dataframes
- Arithmatic Operations with Pandas
- Creating Pivot Tables
- Chaining Functions
- Smoothing Time Series Data
- Creating Line Charts with Matplotlib
- Using Jupyter Notebook
- HTML Markdown
- Creating Scatterplots with Matplotlib
- Relational Database Schemas
- Descriptive Statistics
- Creating Bar Charts, Pie Charts, Donut Charts, Box Plots with Plotly
- Creating NumPy NDArrays

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- Array Slicing and Subsetting
- Matrix Multiplication
- Bitwise and Operators in Pandas
- Creating Bubble Charts with Seaborn
- Running Regressions with Scikit-Learn
- Non-Parametric Regression
- Students T-Tests and Histograms with Scikit-Learn
- Multi-Variable Regression
- Log Transformations
- Residuals Analysis

## PROFESSIONAL PORTFOLIO BUILDING INDEPENDENT ASSIGNMENTS (Day 80+)

- Text to Morse Code Converter
- Portfolio Website
- Tic Tac Toe Game
- Image Watermarking App
- Typing Speed Test
- Breakout Game
- Cafe and Wifi Website
- Todo List Website
- Disappearing Text Writing App
- Image Color Palette Generator
- Custom Web Scraper
- Automating the Google Dinosaur Game
- Space Invaders Game
- Custom API Driven Website
- An Online Shop
- Custom Browser Automation
- Analyse and Visualise the Space Race
- Analyse Deaths Involving the Police in the US
- Predict Earnings using Multivariable Regression