



GRAPH

PYTHON BASICS & BEYOND

INTRO TO DATA ANALYSIS WITH PYTHON

A 12-week Live Cohort Course

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BOOTCAMP FEATURES

PYTHON BASICS & BEYOND

**AN INTRODUCTION TO DATA ANALYSIS WITH
PYTHON**

A 3-MONTH GUIDED COURSE

- Weekly live workshops
- Live help sessions twice a week
- Private community forums
- Personalized feedback on assessments
- Capstone project coaching
- Shareable certificate
- Lifetime access to our tutorial library



The GRAPH Courses

www.thegraphcourses.org

COURSE MODULES

OVERVIEW

MODULE 1

Coding Foundations



MODULE 3

Data Wrangling with Pandas



MODULE 5

Dashboards with Quarto



MODULE 2

Intro to Data Viz with Plotly



MODULE 4

Git & GitHub for Version Control



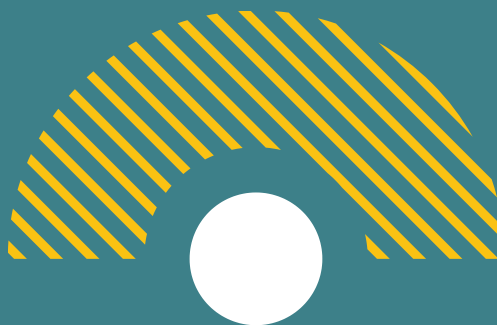
MODULE 1

PYTHON FOUNDATIONS

This module will establish a strong foundation in Python programming, essential tools, and data exploration techniques. You'll learn the core concepts of Python while gaining hands-on experience with practical data projects, collaborating with peers to enhance your learning experience.

Topics:

- Introduction to Python syntax and programming concepts
- Understanding and implementing error handling
- Setting up VSCode as your development environment
- Creating and formatting Quarto documents
- Leveraging ChatGPT for coding assistance
- Collaborative coding practices
- Exploratory data analysis techniques using Python



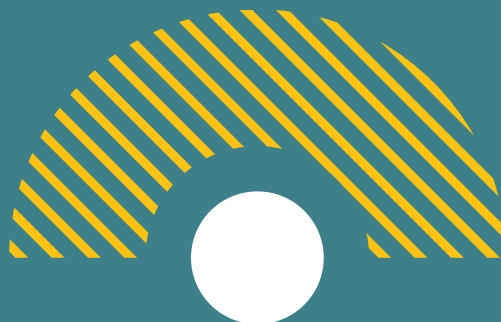
MODULE 2

DATA VISUALIZATION WITH PLOTLY

This module will develop your ability to create impactful and interactive data visualizations using Plotly. You'll learn to effectively communicate complex data findings through visually appealing and informative charts and graphs.

Topics:

- Creating various chart types (scatter plots, line charts, bar charts, etc.)
- Implementing geometric shapes and annotations
- Customizing colors, fonts, and layouts
- Applying themes
- Working with scales
- Adding and formatting labels, titles, and legends
- Creating interactive elements such as hover tooltips
- Combining multiple plots into dashboards and subplots



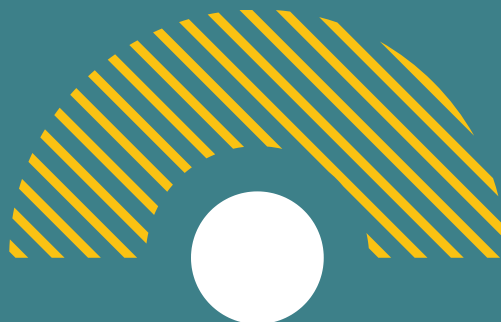
MODULE 3

DATA MANIPULATION WITH PANDAS AND AI (LLMS)

This module will equip you with the skills to handle and transform complex datasets using pandas, Python's powerful data manipulation library, while leveraging Large Language Models for enhanced data analysis. You'll learn to clean, filter, reshape data efficiently, and apply AI-powered operations to derive deeper insights.

Topics:

- Techniques for subsetting data using loc and iloc
- Creating and modifying columns with assign
- Conditional operations for data filtering
- Working with grouped data for aggregation and analysis
- Reshaping data using pivot, melt, and stack/unstack
- Handling missing data and data type conversions
- Merging and joining datasets from multiple sources
- Applying LLM functions to analyze text columns



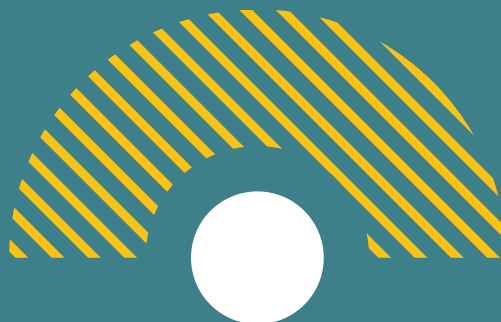
MODULE 4

GIT & GITHUB FOR VERSION CONTROL

Git & GitHub are essential tools for code collaboration and version control that help you track changes, share code, and work with others effectively. This module will teach you the fundamentals of using GitHub with your Python projects, from basic operations to handling common collaboration scenarios.

Topics:

- Setting up GitHub.com account and GitHub Desktop
- Creating repositories and making your first commits
- Pushing changes to and pulling updates from GitHub
- Working with collaborators and handling conflicts
- Managing different versions of your code
- Forking and cloning existing projects



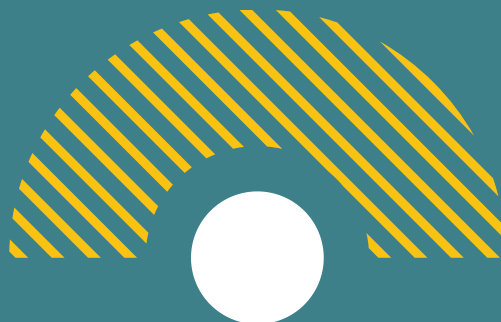
MODULE 5

DASHBOARDS WITH QUARTO

Dashboards in Python with Quarto allow you to create interactive, web-friendly data presentations that combine visualizations, tables, and summary statistics. This module covers how to build professional dashboards that effectively communicate your data insights.

Topics:

- Creating dashboard layouts with pages, rows, columns, and sidebars
- Implementing interactive visualizations using Plotly and other Python plotting libraries
- Adding value boxes and summary statistics for key metrics
- Building responsive data tables and downloadable datasets
- Customizing dashboard themes and styling for professional presentation





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GRADING RUBRIC

The final course grade will be a combination of the following:

- Online quizzes (15%)
- Video code-along submissions (15%)
- Workshop assignments (20%)
- Workshop attendance (10%)
- Final project (40%)

Passing grade: 80%

Attendance policy: Attend at least 7 workshops to receive full attendance credit





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WHY GRAPH COURSES?

At GRAPH Courses, we're committed to making high-quality data science education accessible and impactful. **Based at the University of Geneva, Switzerland**, our program combines academic rigor with practical, industry-relevant skills.

Our bootcamp-style approach ensures an immersive learning experience. You'll gain **technical skills and develop a portfolio of real-world projects**, setting you apart in the job market.

What sets us apart is our **supportive learning ecosystem**. With live workshops, personalized code reviews, and a global community of peers, you're never alone. Our experienced instructors and mentors are dedicated to your success.

As a **non-profit backed by academic institutions**, we offer this comprehensive bootcamp at an affordable price without compromising on quality. Choose GRAPH Courses to invest in a transformative experience that will equip you with the skills and confidence to thrive in the data-driven world.



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INSTRUCTORS & MENTORS



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OUR PARTNERS



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DO RIO DE JANEIRO

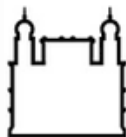


World Health
Organization

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UNIVERSITY OF
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International



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PUBLIC HEALTH



UNAIDS



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