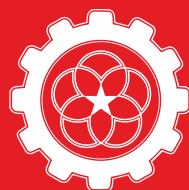


Python Programming



BLOSSOM
ACADEMY



Overview

Gain fluency in Python — the world's fastest-growing major programming language — and start leveraging its versatile capabilities to build web and data science applications.

Whether you have coded before or are brand new to the world of programming, this course will put you on the fast track to building confidence with this intuitive, object-oriented language. Learn programming fundamentals and build a custom application. Graduate with the ability to start applying Python within high-growth fields like analytics, data science, and web development.

Throughout the course, you'll:

- Learn object-oriented programming fundamentals and Python basics that get you coding from day one.
- Build a Python program and add on increased complexity throughout the course.
- Troubleshoot Python code and practice common debugging techniques.
- Push your skills to the next level by adding scripting, modules, and APIs to your Python toolkit.
- Explore introductory data science or web applications as a special topic, depending on your cohort.
- Showcase your skills by creating a custom app that pulls in third-party data with Pandas or integrates functionality from APIs with Flask.



What To Expect

Engage in hands-on, project-based learning that's designed to introduce you to the most important Python programming concepts and functions.

As a student, you'll:

- Explore new concepts and tools through expert-led lectures, discussions, and code-alongs.
- Complete coding exercises to reinforce newly learned skills.
- Dive deeper into topics and techniques via programming labs.
- Receive individualized feedback and support from your instructional team.
- Apply what you've learned to build a custom web or data application.





Prerequisites

This is a beginner-friendly program with no prerequisites, although some students may have coded previously.

First-time programmers will have access to pre-course preparatory lessons and additional resources to boost their confidence with key concepts and set up their development environments.

The Final Project

Apply what you've learned throughout this Python Programming course to build a custom application from scratch. Depending on the focus of your cohort, you will either manipulate and visualize data with Pandas or else integrate APIs with Flask to build a web app of your choice. You'll leave with a portfolio-grade piece to showcase to employers and potential collaborators.



What You'll Learn

Pre-Work

- Gain an introduction to programming and begin writing pseudocode.
- Get acquainted with Python fundamentals, writing “Hello, World” and creating comments.

Unit 1

Python and Programming Fundamentals

- Explore the concept of variables and differentiate between variable types.
- Create and re-assign numerical variables using common naming guidelines and numerical operators.
- Re-assign variables using variables and shorthand assignment operators.
- Create string variables, concatenate strings, and print complex structures.

Lab: Apply what you've learned to create a working Python program.

Unit 2

Control Flow

- Define control flow and describe scenarios in which control flow would be helpful.
- Explore logical comparison. Explain different comparison and equality operators and use them to evaluate and compare statements.
- Get acquainted with Booleans, use if/elif/else conditionals to control program flow based on Boolean conditions, and use comparison operators in conditionals.
- Create and manipulate lists, adding and removing elements and printing out elements/list lengths.
- Understand the use of loops in programming. Implement for loops to iterate lists and range() to dynamically generate loops.
- Explain a while loop and its best use cases. Leverage while loops to control program flow.
- Dive into functions, identifying use cases, creating and calling functions, and returning values.
- Utilize parameters and arguments in functions. Implement keyword arguments.

Lab: Code a working Python program using control flow and functions.



Unit 3 Object-Oriented Programming in Python

- Describe object-oriented programming and provide examples of what could be described as an object.
- Differentiate between keys and values. Compare and contrast dictionaries and lists. Use dictionaries to solve common problems in Python.
- Distinguish between lists and sets. Create variables that hold sets. Use sets to determine the frequency of elements.
- Compare and contrast classes and objects. Define classes. Instantiate objects from classes.
- Explain the use of the `__init__` method. Understand class variables versus instance variables. Create classes with default instance variables.
- Implement inheritance. Describe what has been inherited from one class to another and when to use inheritance.

Lab: Continue building on the previous project, applying Python classes and dictionaries.

Unit 4 Common Python Troubleshooting

- Define variable scope and explain the order of scope precedence that Python follows when resolving variable names. Use the `global` keyword to access global variables.
- Understand common types of errors and use `print` statements to troubleshoot. Implement the `try-except` code to handle errors.
- Define when floats are created, use escape characters, and perform basic data type conversion.

Lab: Continue building the Python program you started in previous labs by incorporating error troubleshooting.

Unit 5 Intermediate Python

- Review Python basics covered so far.
- Get acquainted with key components of intermediate Python coding, such as scripting, abstraction, modules, and libraries and APIs.
- Define the uses of scripting and write scripts that perform file I/O and take user input.
- Explore code abstraction. Use `itertools` to implement efficient looping and list comprehensions to concisely create lists.
- Add libraries and modules to Python programs. Create programs utilizing PyTime. Navigate library documentation.



Unit 5 Intermediate Python (Cont.)

- Describe what an application programming interface (API) is and why we might use one. Identify common APIs on the web. Call APIs.

Lab: Expand upon the previous lab, applying I/O, code abstraction, and libraries to a Python program.

Unit 6 Python Project

- Review what's been covered throughout the course.
- Choose a project based on your interests and use Python skills to build an application.
- Identify ways to keep learning.

Lab: Expand upon the previous lab, applying I/O, code abstraction, and libraries to a Python program.



Frequently Asked Questions

Why are Python programming skills relevant today?

The future is bright for programmers who know Python — it's a baseline skill for high-growth industries like analytics, artificial intelligence, cybersecurity, and data science, which was named LinkedIn's No. 1 most promising job of 2019.

It's also incredibly accessible. Thanks to its versatility and intuitive syntax, Python is one of the easiest languages to learn on the market — a good choice for beginners to the world of programming.

What are the professional backgrounds of Python programming students?

Python Programming is our best entry-level course for professionals looking to gain a foundation in programming to kickstart a move into tech or data. You'll find a diverse range of students in the classroom including:

- New programmers who want to get up and running quickly with an object-oriented language.
- Graduates of our Data Analytics course who enjoyed the programming aspects of Excel and SQL.
- Anyone considering further study in our Data Science or Data Science Immersive programs, which require a strong foundation in Python programming.

Regardless of their backgrounds, this program attracts a community of eager learners who want to know how to code out a project, make sense of documentation, and continue honing their Python skills independently.

What does my tuition cover?

Here are just some of the benefits you can expect as a BA student:

- 20 hours* of expert instruction from a Python practitioner, plus many more spent tackling homework, honing projects, and getting technical support in office hours.
- Robust coursework, including expert-vetted lesson decks, project toolkits, and more. Refresh and refine your knowledge throughout your professional journey as needed.
- A web programming or data science specialization track, which your instructor will select based on class interest and local job market demand.
- A real-world project where you'll develop a custom web or data application from scratch.
- Individual feedback and guidance from instructors and TAs. Stay motivated and make the most of your experience with the help of BA's dedicated team.
- Exclusive access to alumni discounts, networking events, and career workshops.
- A BA course certificate to showcase your skill set on LinkedIn.
- Connections with a professional network of instructors and peers that lasts well beyond the course. The global BA community can help you navigate and succeed in the field.



Will I earn a certificate?

Yes! Upon passing this course, you will receive a signed certificate of completion. Thousands of BA alumni use their course certificate to demonstrate skills to employers and their LinkedIn networks. BA's technology training courses are well-regarded by many top employers, who contribute to our curriculum and use our programs to train their own teams.

Who teaches this course?

Our instructors represent the best and brightest Python programming and software engineering experts who have worked for companies like Etsy, Zendrive, and Honey.is. They combine in-depth knowledge as practitioners with a passion for nurturing the next generation of talent.



What projects will I work on during the course?

For your capstone project, you'll apply what you've learned throughout the course to build a polished, portfolio-ready web or data application. Showcase your skills by creating a custom app that pulls in third-party data with Pandas or integrates functionality from APIs with Flask, depending on the focus of your cohort.

We encourage you to tackle a problem that's related to your work or a passion project you've been meaning to carve out time for.

Throughout the course, you'll also complete a number of smaller projects designed to reinforce what you've learned in each unit.

Take The Next Step

Have questions about our Python Programming course? Our Admissions team is here to help you determine if this program is right for you and your goals. To contact a representative on our team, email info@blossomacademy.co