

Course Information

Course Name: Python Fundamentals

Description: Python is a high level programming language that has become a standard in industry. This course introduces programming in Native Python using an IDE.

Available Date: May 1, 2020

Ages: Students 15 to 18 Years. No prior coding experience required. Students under 15 years of age who have completed HTM:/CSS/JSS.

Pricing: Monthly Course Fee \$99.00 for one 1 x 60 minute classes per week or 2 x 60 minute classes per week for \$178.00

Billing: You will be billed 30 days after your first billing.

Additional Materials: No Purchase Necessary

Instructor/Student Ratio: 1 to 6 maximum. Typically 1:4.

Course Description

Python is a powerful easy-to-learn coding language that is perfect for teaching individuals who are new to coding. But it is also used extensively in commerce and forms the backbone of many of the libraries used by artificial intelligence (AI).

Why Python?

Computer languages are nothing new, but most languages have significant drawbacks for the general public. Learning the likes of C++, or Java truly means immersing yourself in a new language, with new syntax, and seemingly as many exceptions as rules.

The language's inventor, Guido van Rossum, is a native of The Netherlands. More than anything, he wanted a language that could make sense to people who didn't spend 18 hours a day in front of a computer screen, and that would preach simplicity.

Python Fundamentals

This course introduces the foundations of Python over 16 weeks. In each of the first 14 weeks, a focus concept is introduced using worksheets and exercises. Emphasis is placed on understanding the concept and how it is used in programming using clear non-technical English.

The final two weeks are dedicated to a capstone project that demonstrates mastery over course materials. Along the way, Short Assignments are

given to provide additional practice outside of class.

Concepts covered include: functions, data types, variables and expressions, conditional statements, lists, for loops, nested loops, inputs, style, parameters, math operators, conditional operators, animation, shapes.

Python or Java?

The Python vs Java debate has been ongoing for years. Java consistently topped lists of the most popular programming languages since the turn of the century. However, Python's popularity has grown at an impressive rate in recent years and in 2019 surpassed Java.

Our experience is to **Start With Python**. It is a much easier first language to learn:

- Python uses intuitive commands such as 'if', 'for', 'while', 'try', 'with' and 'print' that are easily recognizable by and follow the syntax of basic English composition.
- One of the biggest differences between Python and Java is the way that each language handles variables. The difference comes down to the fact that Python is a dynamically typed language while Java is a statically typed language. "Dynamically typed" languages are easier for beginners.
- Python's uses indentation to separate code into blocks. Java, like most other languages, uses curly braces to define the beginning and end of each function and class definition. The advantage of using indentation is that it forces you to type code in a way that is easy to read, with no chance of errors because of a missing brace.
- Python and Java are both extremely popular. As a result, there are large developer communities and plenty of support for both. Because they are so widely used, it's easy to find help on forums, message boards, and other online communities should you need Java or Python technical support.

Python Fundamentals is a good choice if:

- You're a beginner looking for an easy-to-learn first programming language;
- You have completed UCode's HTML/CSS/JSS curriculum;
- You wish to get ahead on your university CS100 coding requirement.