

# BIOF 309: Introduction to Python

Python is a free, open-source and powerful programming language that is easy to learn. This course is intended for non-programmers who want to learn how to write programs that expand the breadth and depth of their daily research. Most elementary concepts in modern software engineering will be covered, including basic syntax, reading from and writing text files, debugging python programs, regular expressions, and creating reusable code modules that are distributable to peers. The course will also focus on potential applications of Python to bioinformatics, including sequence analysis, data visualization and data analysis. Students will also learn to use the Jupyter Notebook and the PyCharm integrated development environment (IDE), which are available at no cost.

## **INDIVIDUAL LAPTOP IS NEEDED FOR EACH CLASS.**

*Continuum Analytics Installer Anaconda (V3) will be utilized to install Python and the necessary packages.*

## Learning Objectives

- Gain basic understanding of elementary concepts ubiquitous in modern software engineering: regular expressions; reading from and writing to text files; and, recursion
- Apply Python to important functions in bioinformatics such as sequence analysis, data analysis and data visualization
- Learn how to obtain and rework an existing script to meet current needs
- Gain experience in two programming environments (Jupyter Notebook and PyCharm IDE)

**Credits:** 2

**Class Type:** Graduate Course

**Program:** Bioinformatics and Data Science

**Availability:** Summer 2022