

An Introduction to Programming in Python

LECTURE 0 course syllabus

Course description

Introduction to Programming in Python is intended for Junior and high school students with little or no programming experience. This course focuses on python programming for algorithms and data analytics. After completing the course, students should have a solid foundation of Python programming to explore research projects, and further topics in data science. The course also paves the road to an AP Computer Science and critical thinking projects.

This is a two-semesters course in English. It requires students to complete programming problem sets. A laptop with physical mouse is required for taking the class.

Prerequisites

Students (grade 7 and above) who plan to take this course should have a solid grasp of Algebra I, an interest in logic and programming, and self-motivation in learning Python.

Class information

- Tuition: \$180 (tuition:\$150, material fee:\$30 (Fall semester, 2018))
- Time: 13:00-13:50 PM Sunday, Room 125
- Class capacity: 15

Topics

- Python installation, Numbers, Strings
- Operators, List
- Control flow I
- Control flow II
- Dictionary
- 2D list, matrix, tuple, sequence
- Function
- File I/O, data stream
- Introduction to Object Oriented Programming
- Numerical computation
- Data visualization
- Text rendering with LaTeX
- Symbolic mathematics
- Introduction to mathematical modeling

Textbook

No textbook is required. The class provides learning materials from class Google group. Students and parents are required to sign the Google group after enrollment is complete.

Instructor

Changchuan Yin, Ph.D., University of Illinois at Chicago. Mr. Yins research in data analytics employs Python programming, and gives him insight into how programming relates to scientific problems, particularly in biology. Samples of programs in his research projects can be found at <https://github.com/cyinbox>. Contact: cyinbox@gmail.com