

Computer Programming in Python

Columbia Science Honors Program, Spring 2019

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COURSE SCHEDULE: The Course Schedule will almost definitely change as the semester goes along.

2/2 – Class 1 Introduction

- Introduction to Computer Science and Programming
- Your First Python Program: “Hello, World!”
- Intro to Datatypes, Setting Variables, and Using Operators
- [LAB: Setting Up, Minecraft Hour of Code Exercise – Practicing Algorithms](#)

2/9 - Class 2 Python Programming Fundamentals

- Datatypes, Variables, and Operators (continued...)
- Control Flow: if-elif-else

2/16 - Class 3 Special Lecture

- Algorithms by Dr. Paul Blaer

2/23 - Class 4 Review/Functions/Lists

- Control Flow continued...: while, for loops
- Lists

3/2 - Class 5 Functions and Advanced I/O

- Defining and calling functions
- Advanced I/O
- Introduction to PPM project

3/9 - Class 6 Review/Numpy/Recursion

- Review of Advanced I/O
- Intro to Numpy and Matplotlib
- Intro to Recursion
- Intro to Percolation project

3/16 - Class 7 Special lecture

- Applications of computer science

3/30 - Class 8 Review

- Control Flow
- Define and call functions
- Advanced I/O
- Any requested topics
- [LAB: Submit final project plans](#)

4/6 - Class 9 Object Oriented Programming

- Object Oriented Programming
- More datatypes (if time)

4/13 - Class 10 Sorting algorithms and analysis

- Review OOP
- Selection, Insertion, Bubble sort
- Recap of recursion with Mergesort
- Big-O Analysis

5/4 - Class 11 No planned material/Review requested topics

5/11 Class 12 Final Projects