6.100L | Fall 2022 | Undergraduate

Introduction To CS And Programming Using Python

Calendar

In-person lectures were mandatory and occurred on Mondays and Wednesdays. Recitations were held on Fridays and were optional.

Finger Ex. stands for “Finger Exercises” and “PS” stands for “Problem Set.”

WEEK #	MONDAY LECTURE	WEDNESDAY LECTURE	RECITATIONS
1	No lecture.	**Lecture 1**: Introduction to Python: knowledge, machines, objects, types, variables, bindings, IDEs **Readings:** Ch 1, Ch 2.1–2.2 **Lecture 1 Finger Ex. handed out** **PS 0 out (not graded)**	**Recitation 1**
2	**Lecture 2:** Core Elements of Programs: strings, input/output, f-strings, operators, branching, indentation **Readings:** Ch 2.3–2.4 **Lecture 2 Finger Ex. handed out** **Lecture 1 Finger Ex. due** **PS 1 out**	**Lecture 3:** Program Flow: control flow, loops **Readings:** Ch 2.5–2.8 **Microquiz 1** (30 minutes in-class on your computer) **Lecture 3 Finger Ex. handed out** **Lecture 2 Finger Ex. due**	**Recitation 2**
3	**Lecture 4:** Iteration, Simple Programs: guess and check, binary, fractions **Readings:** Ch 3.1, 3.3 **Lecture 4 Finger Ex. handed out** **Lecture 3 Finger Ex. due**	**Lecture 5:** Simple Algorithms: approximation method, floats **Readings:** Ch 3.2–3.3 **Microquiz 2** (30 minutes in-class on your computer) **Lecture 5 Finger Ex. handed out** **Lecture 4 Finger Ex. due** **PS 1 halfway hand-in due**	No recitation
4	**Lecture 6:** Simple Algorithms: bisection search, Newton-Raphson **Readings:** Ch 3.4–.5 **Lecture 6 Finger Ex. handed out** **Lecture 5 Finger Ex. due**	**Lecture 7:** Functions: decomposition, abstraction, specifications **Readings:** Ch 4.1–4.2 **Microquiz 3** (30 minutes in-class on your computer) **Lecture 7 Finger Ex. handed out** **Lecture 6 Finger Ex. due**	**Recitation 3**
5	**Lecture 8:** Functions: environments, scope, functions as objects **Readings:** Ch 4.3–4.6 **Lecture 8 Finger Ex. handed out** **Lecture 7 Finger Ex. due**	**Lecture 9:** Tuples and Lists **Readings:** Ch 5.1–5.3 **Microquiz 4** (30 minutes in-class on your computer) **Lecture 9 Finger Ex. handed out** **Lecture 8 Finger Ex. due** **PS 2 out** **PS 1 due**	**Recitation 4**

WEEK #	MONDAY LECTURE	WEDNESDAY LECTURE	RECITATIONS
		Lecture 10: List Operations, Mutability: mutation, aliasing, tricky examples with loops over L **Readings:** Ch 5.3–5.5	
6	No lecture	**Lecture 10 Finger Ex. handed out** **Lecture 9 Finger Ex. due** **PS 2 halfway hand-in due**	**Recitation 5**
7	**Lecture 11:** Aliasing and Cloning, List Comprehensions **Readings:** Ch 5.3–5.5 **Microquiz 5** (30 minutes in-class on your computer) **Lecture 11 Finger Ex. handed out** **Lecture 10 Finger Ex. due**	**Lecture 12:** More Functions as Objects, Keyword Arguments, Default Arguments, Debugging: glass box/black box testing, examples **Readings:** Ch 4.4, Ch 8 **Lecture 12 Finger Ex. handed out** **Lecture 11 Finger Ex. due** **PS 3 out** **PS 2 due**	**Recitation 6**
8	**Lecture 13:** Exceptions, Assertions **Readings:** Ch 9 **Microquiz 6** (30 minutes in-class on your computer) **Lecture 13 Finger Ex. handed out** **Lecture 12 Finger Ex. due**	**Lecture 14:** Dictionaries: keys, values, mutability, iteration over a dict, examples **Readings:** Ch 5.7 **Lecture 14 Finger Ex. handed out** **Lecture 13 Finger Ex. due** **PS 3 halfway hand-in due**	**Recitation 7**
9	**Lecture 15:** Recursion: iteration vs recursion, inductive reasoning **Readings:** Ch 6.1 **Microquiz 7** (30 minutes in-class on your computer) **Lecture 15 Finger Ex. handed out** **Lecture 14 Finger Ex. due**	**Lecture 16:** Recursion: Fibonacci, Fibonacci with a dict, recursion on non-numerics, recursion on lists, Towers of Hanoi (extra) **Readings:** Ch 6.2–6.4 **Lecture 16 Finger Ex. handed out** **Lecture 15 Finger Ex. due** **PS 4 out** **PS 3 due**	**Recitation 8**
10	**Lecture 17:** Object Oriented Programming: data abstraction, class def, class instances, methods **Readings:** Ch 10.1 **Microquiz 8** (30 minutes in-class on your computer) **Lecture 17 Finger Ex. handed out** **Lecture 16 Finger Ex. due**	**Lecture 18:** Object Oriented Programming: dunder methods, examples **Readings:** Ch 10.1 **Lecture 18 Finger Ex. handed out** **Lecture 17 Finger Ex. due** **PS 4 halfway hand-in due**	No recitation
11	**Lecture 19:** Inheritance: hierarchies, subclasses, using inherited methods, examples **Readings:** Ch 10.2 **Lecture 19 Finger Ex. handed out** **Lecture 18 Finger Ex. due**	**Lecture 20:** Inheritance: more examples **Readings:** Ch 10.4 **Lecture 20 Finger Ex. handed out** **Lec19 Finger Ex. due** **PS 5 out** **PS 4 due**	**Recitation 9**

WEEK #	MONDAY LECTURE	WEDNESDAY LECTURE	RECITATIONS
12	**Lecture 21:** Complexity: measuring efficiency, timing programs, counting operations **Readings:** Ch 11 **Microquiz 9 (45 minutes class on your computer)** **Lecture 20 Finger Ex. due** **No Lecture 21 Finger Ex.**	No lecture	No recitation
13	**Lecture 22:** Complexity: Big-Oh notation, Big-Theta notation, complexity relations and classes, calc-complexity **Readings:** Ch 11 **Lecture 22 Finger Ex. handed out**	**Lecture 23:** String and List Examples, Analyzing Complexity, Search: indirection, linear search, bisection search **Readings:** Ch 12.1 **Lecture 23 Finger Ex. handed out** **Lecture 22 Finger Ex. due** **PS 5 halfway hand-in due**	**Recitation 10**
14	**Lecture 24:** Sort: bogo, bubble, selection, merge sort **Readings:** Ch 12.2 **Microquiz 10** (30 minutes in-class on your computer) **Lecture 23 Finger Ex. due** **No Lecture 24 Finger Ex.**	**Lecture 25:** Visualization Library **Readings:** Ch 13 **PS 5 due** **No Lecture 25 Finger Ex.**	No recitation
15	**Lecture 26:** Extras: lists in memory, hashing, simulations, wrap-up **Readings:** Ch 12.3, Ch 17 **No Lecture 26 Finger Ex.**	No lecture	No recitation