CS 110 Computer Programming Using Python

Summer 2024

Course Credits: 4
Contact Hours: 56 hours
Instructor: TBA
Email: TBA

COURSE OBJECTIVES

This course makes an introduction for students to learn the basic skills and languages of computer programming and design. The main topics include computer structure, writing simple programs,data types, functions, classes, lists complexity, objects, graphics, strings, loop structures, algorithm design, recursion and etc.. Students will develop the computing skills by using the Python programming language.

Upon Completion of this Course, students will be able to:

1. Understand basic principles of computers;
2. Understand basics of binary computation;
3. Readily use the Python programming language;
4. Understand the object-oriented program design and development;
5. Understand class inheritance and polymorphism.

PREREQUISITES

None.

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM	POINTS
2 Assignments	10 Points
2 Quizzes	10 Points
9 Lab Reports	45 Points

Midterm	15 Points
Final Exam	20 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

A ≥ 90 > B ≥ 80 > C ≥ 70 > D ≥ 60 > F.

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Guttag, John. ***Introduction to Computation and Programming Using Python: With Application to Understanding Data Second Edition.*** MIT Press, 2016..

Recommended (Optional) Texts or Other Materials:

None.

COURSE TOPICS

MODULE	TASKS
Module 1	**Topics:** Topic 1: Basic principles of computers Topic 2: Using the Python interpreter Topic 3: Introduction to binary computation Topic 4: Input / Output (Lab #1) **Assessments:** Assignment #1
Module 2	**Topics:** Topic 5: Decomposition Topic 6: Abstractions (Lab #2) Topic 7: Functions Topic 8: Tuples, Lists, Aliasing, Mutability, Cloning (Lab #3) **Assessments:** Quiz #1

Module 3	**Topics:** Topic 9: Recursion Topic 10: Dictionaries (Lab #4) Topic 11: Testing Topic 12: Debugging (Lab #5) **Assessments:** Assignment #2 Midterm Exam
Module 4	**Topics:** Topic 13: Exceptions Topic 14: Assertions (Lab #6) Topic 15: Object Oriented Programming Topic 16: Python Classes and Inheritance (Lab #7) **Assessments:** Quiz #2
Module 5	**Topics:** Topic 17: Developing Efficient Algorithms Sorting Topic 18: Program Efficiency (Lab #8) Topic 19: Binary Search Trees Topic 20: Graphs and Applications (Lab #9) **Assessments:** Final Exam

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

1) Late assignments are not acceptable and are subjected to grade deductions.
2) Assignments submitted in the wrong format will be counted as not submitted.
3) Failure to submit or fulfill any required course component results in failure of the class.
4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACEDEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a

learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.