

BRONX COMMUNITY COLLEGE
of the City University of New York
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SYLLABUS: CSI 31 Introduction to Computer Programming I. 3 credits/4 hours.

INSTRUCTOR: Jorge Pineiro

Term: Fall 2024

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PREREQUISITE: CSI30 and MTH30, if required; and ENG2 and RDL 2, if required.

COREQUISITE: MTH31.

TEXT: *Python Programming: An Introduction to Computer Science, third edition*, by John Zelle, Franklin, Beedle & Associates, 2016. ISBN 9781590282755.

Content: Introduction to computer systems and computer logic; techniques of structured programming; data representation; basic algorithm design and implementation in a modern structured language; computer solutions to problems taken from engineering, science, physics, mathematics, business and other applications.

Objectives: By the end of this course the successful student will be able to:

- (1) Identify the basic design of a computer system;
- (2) Describe some of the topics and techniques of computer science;
- (3) Design an algorithm to solve a given problem using the top-down design approach;
- (4) Translate that algorithm into a computer program;
- (5) Demonstrate understanding of the concept of data type;
- (6) Write functions to solve problems, and understand the notion of procedural abstraction;
- (7) Understand and use the three basic programming structures: sequential execution, decision structures, and repetition (loops);
- (8) Use files for input and output,
- (9) Use objects, including the objects of a graphics library, and
- (10) Use strings and lists to manipulate data.

L	Date	Section	Topic	Suggested
1	8/28	Chapter 1	Computers and programs: What is Computer Science? Hardware Basics.	p. 24/1,2,3,4,5
2	9/4		Programming Languages. Inside a Python program. Elements of Programs	
3	9/9	Chapter 2	Writing simple programs:	p. 54/1-10
4	9/11		The Software Development Process.	
5	9/16	Chapter 3	Computing with numbers: Numeric Types.	p. 79-82: 2-16
6	9/18		Type Conversions and Math Library.	
7	9/23	Chapter 4	Objects and graphics I.	p. 126-128: 1-11
	9/25	First Exam		
8	9/30	Chapter 4	Objects and graphics II.	p. 126-128: 1-11
9	10/7	Chapter 5	Computing with strings: The String Type.	p. 171-174: 1-15
10	10/9		String and Lists Methods.	
11	10/15	Chapter 6	Defining functions: Values returned.	p. 206-208: 1-16
12	10/16		Functions and Program Structures.	
	10/21	Mditerm Review		
	10/23	Midterm Examination		
13	10/28	Chapter 7	Decision structures: Simple Decisions.	p. 238-241: 1-17
14	10/30	Chapter 7	Two-Way / Multi-Way. Exception Handling.	p. 238-241: 1-17

L	Date	Section	Topic	Suggested
15	11/4	Chapter 8	Loop structures and Boolean: For Loops.	p. 278-282: 1-15
16	11/6		Post-Test, Loop and a Half. Patterns.	
17	11/11	Chapter 9	Simulation and Design: Simulation.	p. 309-312: 1- 14
18	11/13		Pseudo-random Numbers.Top-Down Design. Bottom-Up Implementation.	
19	11/18	Chapter 10	Defining classes: Defining New Classes.	p. 358-362: 1-14
20	11/20		Objects and encapsulation. Data Processing.	
21	11/25	Chapter 11	Data Collection: Simple Statistics	p. 412-417: 1-19
22	12/2		Non-sequential Collections.	
	12/4			
	12/9	Review		
	12/11	Review		

Academic Integrity: Academic dishonesty (such as plagiarism and cheating) is prohibited at Bronx Community College and is punishable by penalties, including failing grades, dismissal and expulsion. For additional information and the full policy on Academic Integrity, please consult the BCC College Catalog.

Accommodations/Disabilities: Bronx Community College respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of a disability, please contact the disAbility Services Office as soon as possible this semester. The disAbility Services specialists will meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations for this course. You can reach the disAbility Services Office at: disability.services@bcc.cuny.edu, Loew Hall, Room 211, (718) 289-5874.

Grading:

1. There will be two tests during the semester. They are called: First Exam and Midterm Examination.
2. There will be a Final Exam at the end of the semester.
3. The evaluation will be a combination of the First Exam, the Midterm Examination and the Final exam.