

**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.

**PREREQUISITE:** CSI 30 CSI 30; and CUNY English Proficiency, or ENG 100 or 110, if required

**COREQUISITE:** MTH 31.

**TEXT:** *Object-Oriented Programming in Python, 1-st Edition*, by Goldwasser and Letscher, 2008.

**Reference for UML:** Provided by Instructor.

**Reference for TKInter (optional):** Provided by Instructor.

**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 work in the Python language to:

- (1) Use it comfortably as an Object-Oriented language;
- (2) To regard every variable as an object of some class, and to review the built-in types from this perspective;
- (3) USE OOD/OOP to design correctly and to implement web applications and event-driven GUI applications.

Day	Section	Topic	Assignments	Projects
1	1.1-1.2	Data and Types; Functions and Algorithms (UML activity diagram, i.e. flow chart)	pg. 29: 1.5,1.6,1.10	
2	1.3-1.5	Higher Level Languages; Objects and Classes: OO Design (UML class diagram, UML sequence diagram)	pg. 29: 1.15, 1.19, 1.22, 1.25, 1.29, 1.31	
3	2.2-2.5	Built-in Python classes (list, str) and numeric types (int, long, float)	pg. 82-84: 2.5, 2.8, 2.9, 2.14, 2.18, 2.24(a-g)	pg. 86: 2.33
4	2.6-2.8	Expressions, Calling Functions	pg. 84:2.24(j-r), 2.25, 2.27 (a-r)	
5	4.1, 4.4	Lists and Conditional statements for-loops	pg. 151-155: 4.5, 4.9, 4.13, 4.23, 4.27	
6	4.5	For loops	pg. 155: 4.34	pg. 156: 4.39
7		<b>Exam 1</b>		
8	5.1, 5.4	While loops, defining functions	pg. 195-199: 5.4, 5.5, 5.23	
9	6.4	Designing and implementing classes – a Fraction class	pg. 233: 6.10	pg. 233: 6.18 (or complex numbers)
10	5.5	Error checking and exceptions	pg. 200: 5.33, 5.34	
11	7.2, 7.4-7.6	Design and Documentation	pg. 268: 7.4, 7.6, 7.8	
12	7.7	Modules and Unit Testing	pg. 269: 7.6, 7.8	
13	8.1-8.5	Input and Output; Files	pg. 293: 8.5, 8.13	pg. 296: 8.21-8.24
14		<b>Exam 2</b>		
15	3.1-3.3	Graphics (optional TKInter)	pg. 121: 3.5	pg.123: 3.17
16	9.1-9.4	Inheritance	pg. 328: 9.3, 9.6	

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17	4.3, 11.1	Structural recursion – Drawing a pyramid	pg. 151: 4.7, 4.10, pg. 390: 11.4	
18	11.3, 11.4	Procedural recursion – Binary search	pg. 391: 11.6, pg. 395: 11.31	
19	12.1, 12.2	Container Classes (list vs. tuple; Dictionary)	pg. 433: 12.5	pg. 434: 12.14
20		<b>Exam 3</b>		
21	15.1	Event-driven programming (UML state diagram)	pg. 519: 15.1, 15.2	
22	15.2-15.4	Event-handling	pg. 520: 15.6	pg. 520: 15.12 (or other GUI Project)
23	16.1-16.2	<b>(Optional topic)</b> A Network Primer, Basic Client	Modify fig.16.5	
24	16.3	<b>(Optional topic)</b> Basic Server	pg. 556: 16.1	
25	16.4	<b>(Optional topic)</b> A Chat Room		One of pg. 557: 16.8-16.12
26		Review		
27		Review		
28		Review		

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**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](mailto:disability.services@bcc.cuny.edu), Loew Hall, Room 211, (718) 289-5874.

**If you test positive for COVID while taking an in-person/hybrid course:**

- Using your BCC email account, please email all your **in-person and/or hybrid** professors of your status.
  - Please include your emplid # and current phone number in your email.
  - Please also email us at [healthservices@bcc.cuny.edu](mailto:healthservices@bcc.cuny.edu).
  - Your professor will work with you to complete class work while you are in quarantine.
- You will be called by a Health Services staffer. It is critical that you connect in a timely matter with this staff member for contact tracing information.
- You will need to submit a negative COVID test to Health Services ([healthservices@bcc.cuny.edu](mailto:healthservices@bcc.cuny.edu)) before you are allowed access to the campus.
- Your negative test result must come from your doctor or a medical provider (e.g. CityMD, Urgent Care, etc.). We will **not** accept a negative home test result.