Bronx Community College
Department of Mathematics and Computer Science
Course Outline Fall 2018

Course: CSI 31 - E01 45671 Introduction to Computer Programming I **Time and location:** M W 6:00-7:50pm. New Hall 23. **Prerequisites:** CSI30 and MTH30, and ENG02 and RDL02 if required
Corequisite: MTH31 **Text:** Python Programming: An Introduction to Computer Science, third edition, by John Zelle, Franklin, Beedle & Associates, 2016. ISBN 978-1-59028-275-5

Instructor: Dr. Sharon Persinger   **Office:** CPH 306   **Office hours:** Wednesday 5:00-6pm, other times by appointment   **E-mail:** sharon.persinger@bcc.cuny.edu

Course web site: This course will have a web site where you can check the syllabus, download the slides of classroom lectures and other in-class work, and get the list of programming assignments. Details will follow.

Course overview and goals: CSI 31 introduces students to programming design and implementation. In this course students will learn basic programming concepts and methods in keeping with modern programming philosophy.

Course objectives: By the end of this course the successful student will be able to:
1. Identify the basic parts of a computer system and describe their functions,
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) in developing algorithms,
8. Read data from a file and save data to a file,
9. Use objects, including the objects of a graphics library, and
10. Use strings and lists to manipulate data.

Grading: There will be a two-hour long midterm exam worth 100 points. There will be 8 programming assignments, worth a total of 200 points. There will be short programming problems worth 100 points using the online software CodeLab. There will also be a comprehensive final exam worth 100 points. Your final grade will be based on 500 points:

Midterm   100 point
Programming assignments   200 points
CodeLab assignments   100 points
Final exam   100 points
Total   500 points

I use the college`s recommended grading scale:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Average	97-100	93-96.9	90-92.9	87-89.9	83-86.9	80-82.9	77-79.9	73-76.9	70-72.9	67-69.9	63-66.9	60-62.9	below 60
Points out of 500	485-500	465-484	450-464	435-449	415-434	400-414	385-399	365-384	350-364	335-349	315-334	300-314	below 300

Midterm Exam: The midterm exam will be given on October 22, and will cover Chapters 1-5 of the text. A make-up will be permitted only if you can provide a written medical or other significant excuse for your absence.

Programming assignments: One of the main goals of this course is for you to learn to program, which you do by writing programs. There will be 8 required programming assignments. The dates when these assignments will be given are listed on the syllabus, and due dates will be announced when the assignments are given. More details will be given with the first programing assignment. These assignments are an essential part of the course; they are not optional.

There will also be a collection of short programming problems using the on-line software CodeLab. You will be required to complete about 60 problems by midterm, and around 60 more problems after midterm. Details will be given with the introduction to CodeLab during the second week of class.

Academic integrity and plagiarism: I encourage you to discuss your approach to solving a programming problem with other students. However, allowing another student to copy your program code, either by typing it or by making a copy of the file, is dishonest. Copying a program from any source is plagiarism. Getting someone to write a program for you is also plagiarism. All students involved in plagiarism on a programming project, those who copy and those who are copied from will receive a grade of 0 for that project.

Attendance and lateness: You are required to attend class, and to be on time. Absence will be excused only for medical or other significant reasons, documented in writing. If you have 4 or more unexcused absences, two weeks of classes, your grade may be reduced by one full letter. If you come to class more than 15 minutes late, you will be marked late, and two lateness marks counts as an absence.

Cell phones: As a courtesy to everyone in the class, you should turn off cell phones and put them away during this class. Please remove any headphones and put them away. If you need to be accessible to family or work by phone during class, please talk to me about that situation. You are not allowed to talk on a cell phone during class. You are not allowed to send text messages during class. You are not allowed to talk on a cell phone or send text messages during an exam; anyone who does this will receive a grade of 0 for that exam.

Assistance: Come to my office hours with any questions or make an appointment to see me at another time.   You can also ask questions by email; I will respond within 24 hours.

Holidays and other important dates:
September 3, Monday	Labor Day College Closed
September 5, Wednesday	Classes follow a Monday schedule
September 10-11, Monday-Tuesday	Rosh Hashanah No classes
September 18-19, Tuesday-Wednesday	Yom Kippur No classes
October 8, Monday	Columbus Day College closed
October 15-22, Monday-Monday	Midterm Exam period
November 22-25, Thursday-Sunday	Thanksgiving, college closed
December 12, Wednesday	Last day of classes

CSI31 Fall 2018 Schedule	
8/27/2018 day 1 Introduction. Review of syllabus. 1.1-1.5: Computer, computer science, program, algorithm, hard-ware, programming languages. Read sections 1.1-1.5 of the text.	8/29/2018 day 2 Review of syllabus. 1.6 - 1.8: Python shell. Running Python programs. Read sections 1.6 - 1.8 of the text.
9/3/2018 No classes	9/5/2018 day 3 2.1-2.5: Software development process, identifiers, expressions, assignment statements Introduction to CodeLab Read sections 2.1-2.5 of the text.
9/10/2018 No classes	9/12/2018 day 4 2.6-2.7: Definite loops, example program on future value. More CodeLab. **Programming Assignment 1**

	Read sections 2.6-2.7 of the text.
CSI31 Fall 2018 Schedule	
9/17/2018 day 5 3.1-3.5: numerical data types, how numbers are represented by computers, long integers, accumulator pattern, factorial Read sections 3.1-3.5 of the text.	9/19/2018 No classes
9/24/2018 day 6 **Programming Assignment 2**	9/26/2018 day 7 4.1-4.4: Overview of objects, simple graphics programming, using graphical objects Read sections 4.1-4.4 of the text
10/1/2018 day 8 4.5-4.6: Example program: graphing future value, setting coordinate systems 4.7-4.8: Interactive graphics, graphics module reference Read sections 4.5-4.8 of the text	10/3/2018 day 9 5.1 - 5.6: Strings, lists, indexing, character encoding, more methods for strings and lists, Read sections 5.1-5.6 of the text. **Programming Assignment 3**
10/8/2108 no classes	10/10/2108 day 10 5.7 - 5.9 Secret codes, input/output, file processing Read sections 5.8-5.9 of the text.
10/15/2018 day 11 **Programming Assignment 4**	10/17/2108 day 12 Review for Midterm exam on Chapters 1, 2, 3, 4, 5
10/22/2018 day 13 Midterm exam on Chapters 1, 2, 3, 4, 5 Programming Assignment 5	10/24/2018 day 14 6.1 - 6.4: Functions, defining functions, calling functions, parameters, arguments, scope Read sections 6.1-6.4 of the text
10/29/2108 day 15 6.5 - 6.6: Getting results from a function, return value, modularity Read sections 6.5-6.6 of the text	10/31/2018 day 16 **Programming Assignment 5**
11/5/2018 day 17 7.1-7.3: Decision structures: simple decisions, two-way decisions Read sections 7.1-7.3 of the text.	11/7//2108 day 18 7.4-7.5: Multiway decisions, Exception handling, max of three Read sections 7.4-7.5 of the text
11/12//2018 day 19 8.1 For loops: a quick review 8.2 Indefinite loops **Programming Assignment 6**	11/14/2018 day 20 8.3: Loop patterns: interactive loops, sentinel loops, file loops, nested loops Read sections 8.1-8.3 of the text.
11/19/2018 day 21 8.4-8.5: Booleans, boolean operators, other loop patterns Read sections 8.4-8.5 of the text	11/21/2018 day 22 9.1-9.2: simulating racquetball: simulation, pseudo-random numbers Read sections 9.1-9.2 of the text **Programming Assignment 7**
11/26/2108 day 23 9.3- 9.5: Simulating racquetball: top-down design, bottom-up implementation, testing, other design techniques Read sections 9.3 - 9.5 of the text.	11/28/2018 day 24 11.1-11.2: Statistics example, lists, list operations
12/3//2018 day 25 11.6: Dictionaries Read section 11.6 of the text.	12/5//2018 day 26 **Programming Assignment 8**
12/10/2018 day 27 Lab Day	12/12/2018 day 28 Review for Final Exam