CPSC120
Programming
Syllabus

Instructor: Dr. Durell Bouchard
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Course Objectives

This course is the first in a two-course sequence designed to introduce students to the fundamental concepts of computer science. The course focuses on developing algorithms to solve problems and using the programming language Python.

Intended Learning Outcomes: At the end of the course, the successful student will be able to

1. design and implement (in the Python programming language) algorithms to solve problems appropriate for an introductory course.
2. use the basic data types (numbers, booleans, and strings), control structures (conditionals and loops), data structures (lists and dictionaries), and modules (math and random) provided by the Python language.
3. debug programs that complete execution but have incorrect output.

Other Intended Outcomes: I hope that by working hard throughout the semester you will:

1. look forward to coming to class
2. think of programming assignments as fun puzzles
3. celebrate failure as an opportunity to learn
4. feel like there is no system too complicated for you to learn

Course Content

Prerequisites: There are no prerequisites for this course.

Text: *How to Think Like a Computer Scientist: Learning with Python: Interactive Edition*, by Bradley Miller and David Ranum, Runestone Interactive, 2015.

Activities: Programming activities during class give the student a structured experience in software design, implementation, and debugging. They also increase the student's ability to use and understand the tools available for software development. In addition, the activities connect the reading and lectures to the practice of programming and prepare students for assignments. Activities not completed during class are due the next class.

Assignments: Regular small programming assignments are designed to reinforce class concepts. You are encouraged to start on them immediately when assigned and get help from the instructor as needed. Assignments are due before the beginning of class. Late assignments will receive no credit.

Project: The focus of the course is a hands-on software development project of your design. This project is designed to allow you to put together all of the problem-solving and programming skills you have learned.

Quizzes, Tests, and Exams: Short quizzes will be given to make sure you understand the concepts and keep up with the course work. Quizzes will be at the beginning of class. No make-up quizzes will be given. In addition, there will be three tests and one comprehensive final exam.

Test	Date
Test 1	Monday, September 27
Test 2	Wednesday, October 27
Test 3	Friday, November 19
CPSC120A Final Exam	Friday, December 17 (8:30 AM - 11:30 AM)
CPSC120C Final Exam	Friday, December 17 (2:00PM - 5:00PM)

Co-curricular: The Department of Mathematics, Computer Science, and Physics is offering a series of lectures designed to engage the campus community in discussions of ongoing research, novel applications, and other issues that face these disciplines. You may submit to Inquire up to two papers reflecting on a talk you attend for extra credit.

Grading: Course grades are assigned based on the following weights and scale:

Grade Weights

Category	Weight
Quizzes	10%
Activities	10%
Project	10%
Assignments	10%
Tests	45%
Final Exam	15%

Grade Scale

Grade	Range	Grade	Range
A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	0-59

Course Policies

Attendance Policy: If you have a temperature of 100.4 or higher or other COVID symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. For your absence to be excused, you must permit Health Services to notify me that you have consulted them about COVID symptoms. If Health Services informs you that you should isolate and not attend class for multiple days, tell me to make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused. Still, you will need to do the work and graded assignments even if we extend your deadline.

Class attendance is vital to your success in this course; the material covered during missed sessions is the responsibility of the student. Conversations in class illuminate the published class materials and are subject to evaluation on subsequent tests and quizzes. If you anticipate being unable to attend class, email me before class to be excused.

Masks: The College has issued a mask mandate for the semester that requires masks to be worn in common indoor spaces such as our classroom. You must wear a mask in this class. If you arrive without a mask, you will not be allowed to stay and may lose credit for attendance or in-

class work. The bookstore sells masks if you need to make a quick purchase. If the mandate is extended, you will be required to continue to wear a mask.

Make-up Policy: Everyone is expected to take tests and the exam at the scheduled time. If you have an excused absence, email me to arrange for a make-up. Unexcused absences will result in receiving no credit for missed tests and exams.

Late Policy: Unless otherwise specified, assignments are to be turned in before class start on the due date. If you anticipate being unable to meet a deadline, email me before the deadline to request an extension. Unexcused late work will receive no credit.

Academic Integrity: I expect everyone to follow the Academic Integrity policy detailed in the handbook Academic Integrity at Roanoke College. If you ever have questions about how these policies apply to our class, please contact me. The bottom line is that all work you submit for a grade must be solely your own unless explicitly stated as group work.

Electronic Devices: All cell phones must be silenced and stored out of sight during class. The use of any electronic device during a test or quiz is prohibited. Any use of such a device during a test or quiz will be considered a breach of academic integrity.

Subject Tutoring: Subject Tutoring, located on the lower level of Fintel Library (Room 5), is open 4-9 PM, Sunday-Thursday. Subject Tutors are highly trained, current students who offer free, one-on-one (and small group) tutorials in over 80 courses taught at Roanoke College, including: Business, Economics, Mathematics, INQ 240, Modern Languages, Lab Sciences, and Social Sciences. Check out all available subjects and schedule 30- or 60-minute appointments at <www.roanoke.edu/tutoring>. If you have a question, feel free to stop by, or contact us at subject_tutoring@roanoke.edu or 540-375-2590. See you soon!

Accessible Education Services: Accessible Education Services (AES) is located in the Goode-Pasfield Center for Learning and Teaching in Fintel Library. AES provides reasonable accommodations to students with documented disabilities. To register for services, students must self-identify to AES, complete the registration process, and provide current documentation of a disability along with recommendations from the qualified specialist. Please contact Becky Harman, Assistant Director of Academic Services for Accessible Education, at 540-375-2247 or by email at aes@roanoke.edu to schedule an appointment. If you have registered with AES in the past and would like to receive academic accommodations for this semester, please contact Becky Harman at your earliest convenience to schedule an appointment and/or obtain your accommodation letter for the current semester.

Diversity: I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the class.

Preferred Name/Pronoun: I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester to make appropriate changes to my records.

Course Schedule

This course expects you to spend at least 12 hours of work each week inside and outside of class.

Date	Topic
Wednesday, September 1	Turtle
Friday, September 3	Expressions
Monday, September 6	Variables
Wednesday, September 8	Types
Friday, September 10	Input
Monday, September 13	Project
Wednesday, September 15	Reassignment
Friday, September 17	For Loops
Monday, September 20	Range
Wednesday, September 22	Accumulator
Friday, September 24	Project
Monday, September 27	**Test 1**
Wednesday, September 29	Functions
Friday, October 1	Return
Monday, October 4	Scope
Wednesday, October 6	Project
Friday, October 8	Conditionals
Monday, October 11	Logic Operators
Wednesday, October 13	Chained Conditionals
Friday, October 15	While Loops
Fall Break	
Monday, October 25	Project
Wednesday, October 27	**Test 2**
Friday, October 29	Strings
Monday, November 1	String Accumulator
Wednesday, November 3	String Comparison
Friday, November 5	File I/O
Monday, November 8	Project
Wednesday, November 10	Lists
Friday, November 12	Nested Lists
Monday, November 15	Nested Accumulation

Date	Topic
Wednesday, November 17	Project
Friday, November 19	**Test 3**
Monday, November 22	Project
Thanksgiving Break	
Monday, November 29	Objects
Wednesday, December 1	Classes
Friday, December 3	Methods
Monday, December 6	Project
Wednesday, December 8	Project
Friday, December 10	Presentations
Friday, December 17 (8:30 AM - 11:30 AM)	**CPSC120A Final Exam**
Friday, December 17 (2:00 PM - 5:00 PM)	**CPSC120C Final Exam**