

# CPSC 120 Syllabus

**Instructor:** Durell Bouchard

**Student Hours:** TTH: 10:30 AM - 11:30 AM

**Office:** Trexler 365-C

**E-Mail:** [bouchard@roanoke.edu](mailto:bouchard@roanoke.edu)

## Course Objectives

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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 C++.

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

1. design and implement (in the C++ 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 (arrays and structs), and libraries (math and random) provided by the C++ 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

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**Prerequisites:** There are no prerequisites for this course.

**Text:** *How To Think Like a Computer Scientist C++ Edition*, by Barbara Ericson and Allen B. Downey, Runestone Academy, 2020.

**Project:** In this course, you'll get to work on your very own app. You'll use your programming skills to create a cool program that you can proudly share with your friends and family.

**Labs:** During our lab sessions, you'll have the chance to practice your programming skills. It's more fun and easier to learn with others, so please work together with your classmates. These activities will help you get ready for the final project.

**Assignments:** You'll also have some small programming assignments that are designed to be fun and engaging. These assignments will help check your skills and prepare you for the more challenging lab activities.

**Quizzes, Tests, and Exam:** We will have short quizzes to help you understand the concepts and stay on track with the coursework. There will be three tests and **one final exam**.

Test	Date
Test	Friday, September 20
Test	Friday, October 11
Test	Friday, November 15
CPSC120A Final Exam Friday, December 13 (8:30 AM - 11:30 AM)	
CPSC120B Final Exam Wednesday, December 11 (8:30 AM - 11:30 AM)	
CPSC120C Final Exam Tuesday, December 10 (8:30 AM - 11:30 AM)	

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

Grade Weights			
Category	Weight		
Quizzes	10%		
Assignments	10%		
Labs	10%		
Project	10%		
Tests	30%		
Exam	30%		

  

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

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**Attendance Policy:** Attending class is crucial for your success in this course. If you anticipate being unable to attend class, email me before class to be excused.

**Make-up Policy:** Everyone is expected to take quizzes, tests, and exams as scheduled. If you have an excused absence, email me to arrange a make-up. Unexcused absences will result in receiving no credit.

**Academic Integrity:** I expect everyone to follow the Academic Integrity policy detailed in the handbook [Academic Integrity at Roanoke College](#). Please contact me if you have questions about how these policies apply to our class. 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. Using 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](http://www.roanoke.edu/tutoring)>. If you have a question, feel free to stop by, or contact us at [subject\\_tutoring@roanoke.edu](mailto:subject_tutoring@roanoke.edu) or 540-375-2590. See you soon! 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 Dustin Persinger, Assistant Director of Academic Services for Accessible Education, at 540-375-2247 or by e-mail at [aes@roanoke.edu](mailto: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 Dustin Persinger at your earliest convenience to schedule an appointment and/or obtain your accommodation letter for the current semester.

**Student Health & Counseling Services:** Student Health & Counseling Services supports students through in-person health appointments, in-person counseling, 24/7 telehealth (TimelyCare), Therapy Assistance Online, as well as resources related to general wellness, LGBTQ+, sexual assault, substance abuse, and suicide prevention. Unmet health needs can negatively impact your performance in this course. Student Health & Counseling Services can help. Please see <https://www.roanoke.edu/shcs> for more information and to access services.

**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 so I can make appropriate changes to my records.

## Course Schedule

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

<b>Date</b>	<b>Topic</b>
Wednesday, August 28	Turtle
Friday, August 30	Expressions
Monday, September 2	Variables
Tuesday, September 3	Drawing
Wednesday, September 4	Types
Friday, September 6	Graphics
Monday, September 9	Reassignment
Tuesday, September 10	User Interface
Wednesday, September 11	For Loops
Friday, September 13	Loop Variable
Monday, September 16	Accumulator
Tuesday, September 17	Patterns
Wednesday, September 18	Nested Loops
Friday, September 20	<b>Test</b>
Monday, September 23	Animation
Tuesday, September 24	Simulation
Wednesday, September 25	Functions
Friday, September 27	Return
Monday, September 30	Scope
Tuesday, October 1	Testing
Wednesday, October 2	Conditionals
Friday, October 4	Logic Operators

<b>Date</b>	<b>Topic</b>
Monday, October 7	Mouse
Tuesday, October 1	Interaction
Wednesday, October 9	Chained Conditionals
Friday, October 11	<b>Test</b>
<b>Fall Break</b>	
Monday, October 21	While Loops
Tuesday, October 22	Pong
Wednesday, October 23	Strings
Friday, October 25	String Mutation
Monday, October 28	Keyboard
Tuesday, October 29	Wordle
Wednesday, October 30	Characters
Friday, November 1	Binary
Monday, November 4	Arrays
Tuesday, November 5	Cyphers
Wednesday, November 6	Nested Arrays
Friday, November 8	Images
Monday, November 11	Objects
Tuesday, November 12	Image Manipulation
Wednesday, November 13	Methods
Friday, November 15	<b>Test</b>
Monday, November 18	Recursion
Tuesday, November 12	Fractals
Wednesday, November 20	Recursive Return
Friday, November 22	Project
Monday, November 25	Project
<b>Thanksgiving Break</b>	Project
Monday, December 2	Project
Tuesday, November 12	Project
Wednesday, December 4	Project
Friday, December 6	Presentations
Tuesday, December 10 (8:30 AM - 11:30 AM)	<b>CPSC120C Final Exam</b>
Wednesday, December 11 (8:30 AM - 11:30 AM)	<b>CPSC120B Final Exam</b>
Friday, December 13 (8:30 AM - 11:30 AM)	<b>CPSC120A Final Exam</b>