Course Information

Instructor: Adewale Sekoni

Instructor Information

- **Office Hours:** MWTF: 12:00 PM - 1:00 PM
- **Office:** Trexler 365-B
- **E-Mail:** sekoni@roanoke.edu
- **Zoom:** Zoom Meeting Link

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 C++.

Intended Learning Outcomes

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

- Design and implement (in the C++ programming language) algorithms to solve problems appropriate for an introductory course.
- 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.
- Debug programs that complete execution but have incorrect output.

Other Intended Outcomes

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

- Look forward to coming to class.
- Think of programming assignments as fun puzzles.
- Celebrate failure as an opportunity to learn.
- 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 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 Dates

- Test: Friday, September 20
- Test: Friday, October 11
- Test: Friday, November 15
- 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

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.

AI Policy

Students are encouraged to leverage AI tools, such as code assistants and language models, as supplementary resources for learning. However, their use must adhere to the following guidelines:

- **Understanding Over Reliance:** AI tools should be used to aid in understanding concepts, not as a substitute for learning. Students are expected to fully grasp any code or solutions generated by AI tools. Submitting AI-generated content without understanding it is considered academic dishonesty.
- **Attribution:** Any work that involves AI assistance must be properly attributed. If an AI tool is used to generate or refine code, or to help with problem-solving, students must indicate this in their submission. For example, include a comment in the code or a note in the assignment specifying the tool used and how it was applied.
- **Original Work:** Assignments, including programming projects, problem sets, and written work, must reflect the student's own effort and understanding. AI tools may be used for brainstorming and debugging, but the final submission should be the student's original work. Copying solutions directly from AI tools without modification is prohibited.
- **Instructor's Discretion:** The instructor reserves the right to specify when AI tools are not permitted, such as for particular assignments or projects. These instances will be clearly communicated in advance.

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`. 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 Dustin Persinger, Assistant Director of Academic Services for Accessible Education, at 540-375-2247 or by e-mail 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 Dustin Persinger at your earliest convenience to schedule an appointment and/or obtain your accommodation letter for the current semester.

Course Schedule

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

Date	Topic
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	Test
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
Monday, October 7	Mouse
Tuesday, October 8	Interaction
Wednesday, October 9	Chained Conditionals
Friday, October 11	Test
Fall Break	
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	Test
Monday, November 18	Recursion
Tuesday, November 19	Fractals
Wednesday, November 20	Recursive Return
Friday, November 22	Project
Monday, November 25	Project
Thanksgiving Break	Project
Monday, December 2	Project
Tuesday, December 3	Project
Wednesday, December 4	Project
Friday, December 6	Presentations