

Algorithms

CPSC 4115 Section 01

Fall 2026

Instructor Information

- **Name:** Hyrum D. Carroll, PhD
- **Email:** carroll_hyrum@columbusstate.edu
- **Phone:** (706) 507-8182
- **Student Drop-in Hours (in SCCT 442 and [online](#)):**

Day	Times
Mondays	12:00 – 1:00 pm
Tuesdays	11:30 am – 12:30 pm
	3:00 – 4:00 pm
Wednesdays	12:00 – 1:00 pm
Thursdays	11:30 am – 12:30 pm
Fridays	12:00 – 1:00 pm
Walk-ins welcome and other times by appointment	



Course Information

- **Course meeting days and time:** 3:00 – 4:15 PM Mondays and Wednesdays in SCCT 409
 - **Course Description:** This course emphasizes the understanding of data structures and algorithms from an analytical perspective rather than from an implementation standpoint. The concepts developed allow discussion of the efficiency of an algorithm and the comparison of two or more algorithms with respect to space and run-time requirements. Analytical methods are used to describe theoretical bounds as well as practical ones. In general, this course addresses the constraints that affect problem solvability.
-

Required Materials

- **Textbooks:**



[Algorithm Design](#), by Jon Kleinberg and Eva Tardos (1st Edition) (ISBN 13: 9780321295354)

Optional Materials



[Algorithms](#), Jeff Erickson ISBN: 978-1-792-64483-2, (free)



[Khan Academy](#) pages (free)

Course Learning Outcomes

1. The students will demonstrate the ability to read moderately complex programs written in a specific programming language and understand what these programs do.
 2. The students will demonstrate the ability to design algorithms utilizing the principles of object-oriented programming (classes, encapsulation, inheritance mechanisms, polymorphism) to solve moderately complex problems.
 3. The students will demonstrate the ability to design algorithms utilizing some principles of programming (exception handling and recursive programming) to solve moderately complex problems.
 4. The students will demonstrate the ability to write moderately complex programs in a specific programming language to implement these algorithms.
 5. The students will demonstrate the ability to follow specified style guidelines in writing programs, and understand how the guidelines enhance readability and promote correctness in programs.
 6. The students will demonstrate the ability to edit, compile, debug and run programs in a specific programming language.
-

Grading Policy

Your final grade will be based on the completion of the following learning activities:

Assignment	Percentage
Quizzes	20%
Assignments	20%
Exams	40%
Research Project	20%
Total	100%

Specific Course Policies

- **Course Attendance Policy**

I expect each student to be in attendance for each class in-person. Attendance will be calculated by your arrival and duration in class. It is your responsibility to make sure your attendance gets recorded correctly for every class meeting. If you can not make a class, please inform me and get the relevant materials from a classmate. For this course, attendance applies to both lecture and lab (the first and second meeting times each day).

Refer to the CSU Catalog (<https://catalog.columbusstate.edu/academic-regulations/undergraduate-academic-regulations/>) for more information on class attendance and withdrawal.

Computers are permitted in lecture for note taking and completing exercises. Other activities such as web surfing, stock trading, and social networking are inappropriate. Not only do they distract you but also others.

- **AI Policy**

Artificial Intelligence (AI) tools, such as ChatGPT or Microsoft CoPilot, enable assistance in a variety of areas such as: brainstorming, outlining, learning, studying, code explanation of examples, practice questions, and understanding compilation errors. All these areas are appropriate for this course (when used appropriately). Be aware that AI tools may not always be reliable. If you use an AI tool to assist with a graded assignment, include a statement like the following: "[AI tool name] was used in the preparation of this assignment. It was used in the following way(s): [e.g., brainstorming, outlining, grammatical correction] for [portion of the assignment]."

These same tools can also thwart learning by providing easy solutions. Consequently, using these tools for solution generation is not permitted. Providing instructions for an assignment, quiz or exam to AI tools is not allowed for this course. You cannot unsee what you have seen. Use of an AI tool to provide a solution for a graded assignment is considered an act of academic dishonesty.

- **Research Project**

You get to complete a research project this semester in teams of up to three students. Deliverables include a proposal, written paper and a presentation (during the final exam time). Instructions are found at <http://csc.columbusstate.edu/carroll/4115/projects/researchProject.pdf>. Submit your deliverables to the appropriate Assignments in CougarVIEW.

- **Exams**

There will be two exams during the regular semester. They will be proctored using Respondus LockDown Browser. It is known to **not** work with the following devices:

- Chromebooks
 - iPads/tablets
 - Android devices
 - Smartphones
-

CSU Institution-wide Policies

Academic Honesty

All students are expected to recognize and uphold standards of intellectual and academic integrity. Students should submit only the products of their own efforts for credit. Dishonest work will not be accepted for academic credit. Refer to the CSU Student Handbook (2024–2025) for the full policy.

ADA and Section 504 Statement

Columbus State University provides reasonable accommodations under the ADA and Section 504. Contact the **Center for Accommodation and Access** (Schuster Student Success Center, Room 102, 706-507-8755, caa@columbusstate.edu) as early as possible to begin this process.

Title IX Discrimination Statement

Title IX prohibits harassment and discrimination based on sex, including sexual misconduct and pregnancy-related conditions. For concerns, contact:

- **Title IX Coordinator:** Sarah Secoy – secoy_sarah@columbusstate.edu – 706-507-8755
- **Deputy Title IX Coordinator:** Dr. Amber Dees – dees_amber@columbusstate.edu – 706-507-8634

More information is available through the Office for Civil Rights.

CougarVIEW Accessibility Statement

CougarVIEW (D2L Brightspace) is designed to support accessibility and meets WCAG 2.1 Level AAA standards and Section 508 compliance. Visit D2L Accessibility for more information.