

Algorithms Analysis and Design

CPSC 6109 - Section V01

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:**

None (online class)

- **Course Description:**

The need for efficient algorithms arises in nearly every area of computer science. This course covers the modern theory of algorithms, focusing on the themes of efficient algorithms and intractable problems. The course introduces many of the techniques that apply broadly in the design of efficient algorithms, and study their application in a wide range of application domains and computational models. Topics include Basic Data Structuring Problems, Recursion,

Computational Complexity, Graph Algorithms, Greedy Algorithms, Dynamic Data Structures, Hashing, Approximation Algorithms, Linear programming, Parallel Algorithms and Novel Approaches to NP-Complete Problems. The course requires familiarity with Java Programming Language.

Required Materials

- **Textbook(s):**



Introduction to Algorithms, Fourth Edition

Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein

ISBN: 9780262046305

Course Learning Outcomes

Upon completion of this course, students will

- Learn how to design efficient algorithms and to recognize situations where this is not possible.
 - Analyze the asymptotic performance of algorithms.
 - Demonstrate a familiarity with major algorithms and data structures.
 - Apply important algorithmic design paradigms and methods of analysis.
 - Synthesize efficient algorithms in common engineering design situations.
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Grading Policy

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

Assignment	Percentage
Quizzes	20%
Assignments and Projects	40%
Midterm Exam	20%
Final Exam	20%

Assignment	Percentage
Total	100%

Specific Course Policies

- **Course Attendance Policy**

Attendance will be calculated for each module by calculating if at least 70% of the activities for that module were completed.

- **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.

- **Projects**

There will be multiple projects in this course. Projects must be written in Java. They are due at 10:00 PM Eastern Time on the assigned due date (unless indicated otherwise).

If an assignment contains portions that are more than 75% similar to other material (not provided by the instructor), zero points will be awarded. Additionally, an Academic Misconduct incident may be reported as well.

Students missing two or more projects will receive an F or FA in this course. It is recommended that you regularly keep a copy of your projects on a second device.

Project Late Policy

A total of at most 3 project late days will be granted for the entire semester for projects (and only for projects). For example, if Project 2 is turned in two days late

and Project 3 is turned in one day late, then all of the late days for the semester have been used.

- **Exams**

There will be an exam during the regular semester (in addition to the final). This will be proctored using Respondus LockDown Browser and Respondus Monitor. Using Respondus Monitor requires a fee of \$15 per year. Respondus Monitor requires a webcam to work. These tools are known to **not** work with the following devices:

- Chromebooks
- iPads/tablets
- Android devices
- Smartphones

If you do not have a compatible laptop or desktop, you will need to find an alternative method to take each of the exams. Some options include:

- You can borrow a computer from the CSU library (or a friend)
- You can come to campus and use a computer in the Tutoring Lab, SCCT 450
- You can take a proctored exam at a library. Most libraries offer these services.

Additionally, I will be participating in a pilot to use a two-camera mode in Respondus Monitor. This mode is required for exam exams.

Final Exam

The course final is comprehensive. Respondus Lockdown Browser and Respondus Monitor are required for the final exam. The final exam will be proctored. Failing the final may result in not passing the class.

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.