

CSCI 232: Data Structures and Algorithms

Spring 2021 Syllabus

The purpose of this course is to provide you with solid foundations in the core aspects of computer science: data structures and algorithms. We will study some fundamental data structures and algorithms that are highly useful for software development and solving computational problems. The course aims to offer students a mixture of theoretical knowledge and practical programming experience. We will use Java as the programming language.

Instructor: Dr. Brendan Mumey
Email: brendan.mumey@montana.edu
Office hours: Tue/Thu: 9:30am - 10:45am

My office hours will be held on zoom: <https://zoom.us/j/96252508556>

Course TAs:

Friday 1000-1150: Dalton Gomez dalton.samuel.gomez@gmail.com

Friday 1200-1400: Nate Lane nathaniellane@montana.edu

Friday 1410-1600: Nate Lane

(labs start on Jan 22 and are held in Roberts 111)

Dalton's office hours: Thu 2:00pm - 3:00pm in WebEx Room:

<https://montana.webex.com/meet/z35h663>

Nate's office hours: Thu 3:00pm - 5:00pm in WebEx Room:

<https://montana.webex.com/meet/m58t399>

ONLINE FORMAT:

Asynchronous lectures: I will record video lectures for all of the material in the course. They are linked from the lecture schedule.

Synchronous Q&A sessions: We will use the scheduled class time (Tue/Thu 10:50am - 12:05pm) to meet to review concepts and for Q&A. These sessions will be held on zoom:

<https://zoom.us/j/96505666108?pwd=SmR2WHpUYTdVOTU5dFEzWk9MK1ordz09>

Meeting ID: 965 0566 6108

Passcode: 730859

Labs: *Due to lab room capacity, in-person attendance in labs is optional.* More information on labs will be available once the semester starts and we have TAs assigned for the course.

Textbook

Sedgewick and Wayne, Algorithms, Fourth Edition
Textbook website: <https://algs4.cs.princeton.edu/home/>

Resources

Ecat (Brightspace): Used for class announcements, quizzes, grades:

<https://ecat.montana.edu>

Google drive: Course documents such as the lecture schedule and homework will be stored in this google drive folder:

https://drive.google.com/drive/folders/1Qli4nYigA2ABg_KghPIgs9cBFzbrHv5q?usp=sharing

Optional: You may 'sync' this folder to your computer. Here are some instructions, however some students have reported getting 'server errors' doing this. If that happens, you can also just 'download' the folder.

1. Open the Google Drive folder.
2. Log in to Google if you haven't already.
3. Go to the "Shared with me" tab on the left side of the page.
4. Single click on the "CSCI 232 S21" folder.
5. Hit "Shift-Z" on your keyboard.
6. In the menu that appears, click "My Drive" and then click on the "Add" button at the bottom of the menu.
7. Now, you can set up Google's "Backup and Sync" program (https://www.google.com/intl/en-GB_ALL/drive/download/). During setup, it'll ask you to log in, specify what files on your computer you want to backup to your own Google Drive (not exactly relevant for this guide, but you can set it up if you want), and then identify what folders on your Drive you want to sync to your computer and where. Here, you should be able to see the "CSCI 232 S21" folder. Select it, tell Google where you want it on your computer, and with that, you should have the course files synced to your computer.

Gradescope: Used for submitting problem sets and programming assignments. Log in gradescope.com with your MSU credentials.

CS Student Success Center (Barnard 254):
<http://www.cs.montana.edu/student-success-center.html>

Assignments

Out-labs: You should work with one lab partner.

In-labs: There will be periodic written assignments (normally these would be in-lab assignments, but you may do them out of lab). These must be done individually.

Quizzes

There will be periodic quizzes during the semester; these will be done online.

Grading Scheme

Quizzes	20%
In-labs	40%
Out-labs	40%

Final course grades may be curved.

Course Outcomes:

After the completion of this course students will have:

- An understanding of different data structures that are suitable for specific problems.
- An understanding of the design of algorithms based on different data structures.
- An understanding of algorithm complexity.
- The ability to implement data structures and algorithms.
- An understanding of how common computational problems can be solved efficiently.

Academic Integrity

Please do your own work for this class. Penalties for academic misconduct may include receiving a zero on an assignment or failing the course.