

CPSC 2108 – Data structures

Spring 2020

Instructor Information

- Name: Dr. Alfredo Perez
- E-mail: perez_alfredo@columbusstate.edu
- Office Hours: CCT424. Monday, Wednesday and Friday from 8:30AM to 10:00AM, and from 1:30PM to 3:00PM. Fridays from 4:00PM to 5:00PM. Please send e-mail to setup appointments as many students may come.
Also other times are available with appointment only.
- Website : <http://www.alfredojperez.com>

Course Information

Course name and number: Data structures (CPSC 2108 – CRN 24090). Prerequisite (s): C or better in CPSC 1302.

Credit hours: 3 CR

Meeting time and place: MWF 3:00PM – 3:50PM @ CCT 407

Course Description: This course extends the concepts of primitive data types by teaching the student a set of data structures that pervades both the theoretical and practical domains of computer science.

DROP DATE: JAN 23 / 2020

Required/Recommended Textbooks and Materials

As a reminder, you can purchase your books through the [CSU bookstore](#) and can have them shipped directly to you.

REQUIRED MATERIALS

- Textbook: [OpenDSA Data Structures and Algorithms Modules Collection](#).
- MANDATORY IDE: IntelliJ Community Edition <https://www.jetbrains.com/idea/download/> . The Java SE version is enough for the class.

SUPPLEMENTAL MATERIALS

- Additional reading materials and links to activities to be provided by your instructor.

Course Objectives

By the end of this course you should be able to:

1. Explain the principles of algorithmic efficiency
2. Specify, design and implement abstract data types
3. Describe and Implement and use data structures such as lists, stacks and queues
4. Define recursion as a programming technique and use it
5. Describe and Implement and use binary search trees and graphs
6. Describe and Implement and use common Searching and Sorting Algorithms
7. Describe and Implement and use priority queues and heaps

Course Communication

- Course communication will be via face-to-face sessions, CougarVIEW, and CSU e-mail. We may use discussion boards from time to time for some assignments.
- Since this is a face-to-face class supported by the use of CougarView, it is your responsibility if you miss a class to ask about the material done in the class the day you miss.

- You are responsible for abiding by the [Netiquette guidelines](#) included in the Getting Started module for discussion boards as well as for written communication with your peers and the instructor.
- A class lounge is provided for students to discuss technical issues or issues outside the assigned postings.
- Use common sense in writing and sending e-mail.
- Use your official CSU account for all e-mail communication.
- Always identify yourself in the e-mail and let me know what class you attend. If you need clarification on an assignment, ask at least 24 hours before it is due, otherwise you may not get an answer in time to complete the assignment successfully. Read and think about email before sending. Email is a permanent record.

Course Policies

CSU DISABILITY POLICY

If you have a documented disability as described by the Americans with Disabilities Act (ADA) and the Rehabilitation Act of 1973, Section 504, you may be eligible to receive accommodations to assist in programmatic and physical accessibility. We recommend that you contact the Center for Accommodation and Access located in Schuster Student Success Center, room 221, 706-507-8755 as soon as possible. The Center for Accommodation and Access can assist you in formulating a reasonable accommodation plan and in providing support. Course requirements will not be waived but accommodations may be able to assist you to meet the requirements. Technical support may also be available to meet your specific need. For more information go to [CSU Center for Accommodation and Access](#).

COUGARVIEW (D2L BRIGHTSPACE) ACCESSIBILITY INFORMATION

From D2L website: "At D2L we believe learning technologies should never limit learning opportunities. Our accessibility program is tightly integrated with our research and development lifecycle to ensure our tools are standards compliant and easy for people to navigate and understand using the assistive technologies and devices that support their needs. At Desire2Learn we use WAI guidelines, such as the Web Content Accessibility Guidelines 2.0 (WCAG 2.0), Authoring Tool Accessibility Guidelines 2.0 (ATAG 2.0) and Accessible Rich Internet Applications Suite (WAI-ARIA) to ensure our designs are consistent with international objectives." For more information go to [D2L Accessibility](#).

COURSE ATTENDANCE POLICY

Class attendance is the responsibility your responsibility, and it is your responsibility to independently cover any materials missed. Class attendance and participation may also be used in determining grades. It is your responsibility to sign a roll sheet for every class meeting. At my discretion, I may drop you from the course for more than five (5) absences. Missing an exam or quiz is considered an absence. Missed classes caused by participation in documented, formal, University-sponsored events will not count as absences provided you notify me of such anticipated absences in advance and as soon as possible.

You are responsible for all class work missed, regardless of the reason for the absence(s). Late assignments will not be accepted, so if you are absent on the day an assignment is due, it is your responsibility to make alternate arrangements. No makeup exams or quizzes will be given, so please make sure you are present for all exams/quizzes. Refer to the CSU Catalog (<http://ace.columbusstate.edu/advising/a.php#AttendancePolicy>) for more information on class attendance and withdrawal.

Be sure to read and observe the following procedures as well:

- You are a guest in the Instructor's classroom, so be sure to observe the class rules.
- Practice manners and civility, and be polite and respectful of your Instructor and classmates in all your communication.
- Respect your Instructor, and be on time in your work submissions.
- Keep your Instructor informed of your status.
- Address your Instructor as Professor or Doctor.
- Use correct grammar and punctuation in all your communication ('Dear Professor xxx' not 'Hey').
- Accept your Instructor's feedback and learn from it.
- In the online environment, problems associated with power outages, networks being down, and ISP troubles inevitably result in legitimate reasons for delays, however, you should still be prepared to deliver your work by the stated deadlines.
- If you have any problems, let your instructor know as soon as possible.

HOUSE BILL 280

For information regarding HB 280 (Campus Carry), please refer to [House Bill 280](#). It is the permit holder's responsibility to know and comply with the law.

Time Commitment

The ACM recommends the following: “As a general guideline, the amount of out-of-class work is approximately three times the in-class time. Thus, a unit that is listed as requiring 3 hours typically entails a total of 12 hours (3 in class and 9 outside).”

Students will be expected to spend this time outside class reading the book, online materials and other materials; writing solutions to homework exercises and programming projects.

From A Study Guide: “Study actively. Ask yourself questions, review your notes regularly, create concept maps, and discuss key concepts with peers and your instructor. FACT: Association is a key to memory and cognitive research has shown that you will remember 10 percent of what you read, 20 percent of what you hear, 30 percent of what you see, 50 percent of what you hear and see together, 70 percent of what you say, and 90 percent of what you do!”

The amount of time it will take you to complete the work for the course will depend on many factors, which will vary with each individual. Students can expect to spend anywhere from 8 – 15 hours per week on this course in addition to the time spent in the classroom. Consult with the course Calendar and your instructor to be sure you are on schedule, keeping up with the material and submitting assignments and assessments on time.

As a general rule, in this course you will be expected to:

1. Log in regularly to check messages from your instructor and other students.
2. Check the Calendar for announcements from your instructor.
3. Study, read online materials, and work all assigned problems for each lesson.
4. Complete all course work and assignments in the time allowed.

Assignment Requirements

Programming assignments will be submitted as a .zip IntelliJ project. In this class we won't use BlueJ or any other IDE.

When required to have an assignment that includes a typed document (different from code), all assignments should be double-spaced and in 12-point type. Stick to a standard font such as Times New Roman. Correct spelling, grammar, and punctuation

are minimum requirements in a college-level course. You can compose your assignments using MS Word / MS Office or Open Office (free download from openoffice.org).

Place your name and the number of the assignment at the top of the page. Save the document using your name and the assignment number. For example, if your name were Susan Williams, you would submit assignment 1 as Williams_Susan_1. Save a copy of all submitted work and save the graded work when it is returned to you.

Technical Requirements

Students should be able to:

- Write Java code that makes use of abstraction, encapsulation, inheritance and polymorphism.
- Write Java code that makes use of arrays.
- Compose an email
- Attach a file
- Upload a file
- Download a file
- Save a file to computer or USB device
- Use a Webcam if your course requires Proctor-U or uses web-conferencing.

HARDWARE REQUIREMENTS

[GeorgiaView – D2L Help Center, Brightspace compatibility check](#)

SOFTWARE REQUIREMENTS

- MANDATORY IDE: IntelliJ Community Edition. <https://www.jetbrains.com/idea/>
- An office suite such as Microsoft Office or Open Office
 - Microsoft Office 365 is available free to all CSU students at [Microsoft Office 365](#).
 - [OpenOffice](#) can be downloaded for free.
- To open PDF files you might need [Acrobat Reader](#)

- Browser Plugins (Pdf files, QuickTime files, Mp4 files) can usually be obtained at the browsers website.
 - [Google Chrome](#)
 - [Firefox](#)
 - [Safari](#)

You can always learn more about CougarVIEW, sometimes referred to as D2L Brightspace, by clicking on the **Resources** navigation menu and selecting **CougarVIEW (D2L) Student Guide**" on the top navigation bar.

If you need technical support or need assistance configuring your computer, you can refer to the link located in the "Technical Resources" widget located on your "My Home" and your "Course Home" pages. If you can not solve your problem after reviewing the knowledge base help pages, you can call the help center 24-7 and talk to a Help Center agent. The number is 1-855-772-0423.

Academic Honesty

(Acknowledgement is hereby given to USG eCore on whose policy this is based).

All students are expected to recognize and uphold standards of intellectual and academic integrity. As a basic and minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. Both the ideals of scholarship and the need for fairness require that all dishonest work be rejected as a basis for academic credit. They also require that students refrain from any and all forms of dishonorable or unethical conduct related to their academic work.

In an effort to foster an environment of academic integrity and to prevent academic dishonesty, students are expected to discuss with faculty the expectations regarding course assignments and standards of conduct. In addition, students are encouraged to discuss freely with faculty, academic advisers, and other members of the academic community any questions pertaining to the provisions of this policy.

DEFINITIONS AND EXAMPLES

The examples and definitions given below are intended to clarify the standards by which academic honesty and academically honorable conduct are to be judged.

The following list is merely illustrative, and it is not intended to be exhaustive. Moreover, the definitions and examples suggest conditions under which unacceptable behavior of the indicated types normally occurs. However, there may be unusual cases

that fall outside these conditions that also will be judged unacceptable by the academic community.

PLAGIARISM

(NOTE: Plagiarism detection systems are often used by CSU faculty members.)

Plagiarism is presenting another person's work as one's own. Plagiarism includes any paraphrasing or summarizing of the works of another person without acknowledgment, including the submitting of another student's work as one's own. Plagiarism frequently involves a failure to acknowledge in the text, notes, or footnotes the quotation of the paragraphs, sentences, or even a few phrases written or spoken by someone else.

The submission of research or completed papers or projects by someone else is plagiarism, as is the unacknowledged use of research sources gathered by someone else when that use is specifically forbidden by the instructor. Failure to indicate the extent and nature of one's reliance on other sources is also a form of plagiarism.

No cheating in any form will be tolerated. Please be aware that anyone caught cheating or plagiarizing in this class will receive a "0" for the assignment/exam and may receive an F grade for the course. Moreover, a report will be also added to your file and to the BART online system. The second instance of Academic Dishonesty may result in immediate dismissal from the Computer Science programs and expulsion from Columbus State University.

CHEATING ON EXAMINATIONS

Cheating on examinations involves giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include the use of notes, texts, "crib sheets," websites, electronic documents or notes, and computer programs during an examination (unless specifically approved by the instructor), or sharing information with another student during an examination (unless specifically approved by the instructor). Other examples include intentionally allowing another student to view one's own examination and forbidden collaboration before or after an examination.

UNAUTHORIZED COLLABORATION

Submission for academic credit of a work product, developed in substantial collaboration with other person or source but represented as one's own effort, is unauthorized. Seeking and providing such assistance is a violation of academic honesty. However, collaborative work specifically authorized or assigned by an instructor is allowed.

MULTIPLE SUBMISSIONS

It is a violation of academic honesty to submit substantial portions of the same work for credit more than once without the explicit consent of the instructor(s) to whom the material is submitted for additional credit. In cases in which there is a natural development of research or knowledge in a sequence of courses, use of prior work may be desirable, or required. However, the student is responsible for indicating in writing, that the current work submitted for credit is cumulative in nature.

Grading

Students are expected to be fully prepared to discuss the topic(s) each week and complete the assignments each week. Your final grade will be based upon completing the following learning activities and exams.

Graded Activities and Exams

Graded Learning Activities and Exams	Percentage
Exams (3 Exams. approx. every 4–5 weeks, including final exam)	45%
Programming Assignments (5 assignments)	25%
Self-review Questions (16 self-review quizzes, 1 per week)	10%
In class pop-up quizzes	10%
Final Project	10%
Total Possible	100%

Final Grade Calculation

Percentage Range	Final Grade
90–100%	A
80–89%	B
70–79%	C
60–69%	D
59% and below	F

Feedback and Grading Timeline

For assignments submitted on time, the instructor will be able to grade your submissions and provide feedback within two/three weeks after the submission deadline unless stated otherwise in the assignment instructions. Feedback will be posted on CougarView under the Grades tab. Please check your settings to make sure that you will receive an alert when you have a new grade posted. If there's a discussion board, the instructor will be monitoring the discussion boards weekly.