CMPS 223 – Data Structures and Algorithms

Syllabus for Spring 2016 (CRN 31303)

Instructor	Jay Manibo
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Location	SCI III, Room 315

Schedule

	SUN	MON	TUE	WED	THU	FRI	SAT
		Homework from prior week is due at midnight. Homework for current week is assigned				Labs for current week are due at midnight	
11:30am - 1:00pm						**OFFICE HOURS BY APPOINTMENT**	
5:50pm - 7:30pm		LECTURE		LECTURE			
7:30pm - 8:45pm		LAB		LAB			

Course Description

Builds on the foundation provided in CMPS 221 to introduce the fundamental concepts of data structures and algorithms that proceed from them within the framework of object-oriented programming technology. Topics include: recursion, fundamental data structures (including lists, stacks, queues, hash tables, trees and graphs) and basics of algorithmic analysis. Necessary components of object-oriented programming method will be introduced. Each week lectures meets for 200 minutes and lab meets for 150 minutes. Prerequisite CMPS 221.

Prerequisite

Prerequisite: CMPS 221 with a grade of C- or higher.

## *Material Covered*

Chapter 1   Principles of Programming and Software Engineering (brief)
Chapter 3   Data Abstraction: The Walls (brief)
Chapter 4   Linked Lists
Chapter 6   Stacks
Chapter 7   Queues
Chapter 2   Recursion: The Mirrors
Chapter 5   Recursion as a Problem-Solving Technique (prefix and postfix)
Chapter 9   Algorithm Efficiency and Sorting
Chapter 10   Trees
Chapter 11   Tables and Priority Queues (heaps and heapsort)
Chapter 12   Advanced Implementation of Tables
Chapter 13   Graphs

Attendance:

Students are responsible for their own attendance. The course material and assignments will be posted on the course website.

Textbook
HIGHLY RECOMMENDED
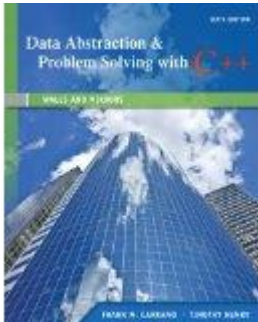
	Data Abstraction & Problem Solving with C++, 5th edition. Frank Carrano. Publisher: Prentice Hall / Pearson. ISBN: 0-321-43332-7.

Academic Integrity Policy:

Labs may be worked on and discussed in groups. If the assignment is a group assignment, the group may turn in one assignment for the entire group. If the assignment is an individual assignment, each student must turn in their own code; no direct copying is allowed. Refer to the Academic Integrity policy printed in the campus catalog and class schedule.

Services for Students with Disabilities:

To request academic accommodations due to a disability, please contact the Office of Services for Students with Disabilities (SSD) as soon as possible. They may be reached at 661-654-3360 (voice), or 661-654-6288 (TDD). If you have an accommodations letter from the SSD Office, please present it to me during my office hours as soon as possible so we can discuss the specific accommodations that you might need in this class.

Tutoring Center and Open Use Computer Lab:

The walk-in computer lab in Sci III 324 is available for use by students in this course outside of class time on a first come, first serve basis. Tutoring is also provided on a limited basis in the walk-in lab. A tutoring schedule will be posted on the department website by the end of the first week of classes. Students in this course may ask the tutors for assistance on assignments. The tutors are not allowed to solve the assignment for you, but they can assist with problems like cryptic compiler errors.

Labs:

Lab assignments are posted on the course website. Labs are usually worth 10 points and usually involving writing 1-2 short programs. The labs will be assigned every assigned lab schedule and will be due by midnight on Friday the same week. Partial credit will be given for incomplete labs. Late labs will be penalized 25% the first day late, and considered zero afterwards. The lowest lab grade will not be counted towards the overall lab grade.

Homework:

Homework assignments are posted on the course website. Homework assignments are usually worth 10 points and consist of multiple small programs. Each homework assignment will generally be assigned every Monday and will be due by midnight Monday the following week.

Programs which do not compile may be given partial credit depending on the severity of the error. Late homework will be accepted and will be marked down 25% the first day late. If there is a notice on the assignment that late homework will not be accepted beyond a certain date, then that is the final day homework will be accepted. Otherwise, assignments more than one day late will not be accepted. Special concessions may apply at my

discretion.

Extra Credit Assignments:

You are encouraged to tackle any extra credit assignments that are usually given during the quarter. The more practice you get, the better you will be, and the extra points don't hurt either.

Labs/Homework Submission:

Assignments are submitted by emailing the instructor all assignment code files from the Computer Science department server. Do not use GMail, webmail or any other email method as the campus firewall and spam filter may silently reject the email. All assignments MUST be submitted to the instructor's Sleipnir account.

Midterms:

Midterm 1 will be given during week 5/6

Makeup midterms will not be given without a compelling or valid reason. Failure to take a midterm without prior notification will result in an automatic score of zero.

Final:

Finals Week is June 8 - 10. Our final will be on **Friday, June 10, 5:00pm – 7:30pm**. If you have a time conflict, you may arrange to take the final at a different time by emailing or speaking to me.

Grading:

Minimum Score	0	60	64	67	70	74	77	80	84	87	90	94	97
Letter Grade	F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A	A+

Labs/Homework	40%
Midterm	30%
Final	30%
Class Participation	2%

At the end of the quarter:
1. I will award—at my discretion—points for class participation. When your total percentage points have been tallied up for the quarter, you can earn:
   a. 0 – For no class participation
   b. 1 – Some participation
   c. 2 – Active, constant participation

   For example, if you have an 88% as your final score, and I know you have been actively participating in class discussion, I will award you 2 additional points to bring your grade score to 90% for the quarter.