

CSC 252/254: Data Structures

Fall 2015

Instructor:

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RS 214

Meeting Times and Location:

Wednesday lab: 7:25-9:10 Bresee Lab
Wednesday/Friday lecture: 1:30-2:45 LA 102

Office hours:

Monday 11-12, 1:30-2:45
Tuesday 9-10, 1:30-4:30
Thursday 9-10, 1:30-2:45
Friday 9-10

Text:

CSC 252 & CSC 254

M.A Weiss. *C++ for Java Programmers*. Pearson Publishing, 2004

CSC 254

M.A. Weiss. *Data Structures and Algorithm Analysis in C++ (4th edition)*, Pearson, 2014

Course Description:

As students transition from Java to C++, more advanced data structures, including queues, stacks, trees, and graphs are defined and illustrated with associated dynamic storage management mechanisms. Students taking the semester-long CSC 254 are further introduced to formal techniques to support the design and analysis of algorithms, focusing on both the underlying mathematical theory and practical considerations of efficiency. Topics include measuring the complexity of recursive and iterative algorithms, algorithmic strategies, the concept of intractability and the theory of NP. Emphasis is placed on non-numerical algorithms such as sorting, searching, graph and network algorithms both sequential and parallel. All concepts are reinforced with weekly programming assignments.

Course Learning Outcomes:

- Students will be able to write correct and robust software.
- Students will use the theory of algorithms and computation to solve problems.
- Students will analyze the interaction between hardware and software.
- Students will be able to apply their technical knowledge to solve problems.
- Students will be able to speak about their work with precision, clarity and organization.
- Students will be able to write about their work with precision, clarity and organization.
- Students will collaborate effectively in teams.
- Students will be able to gather relevant information, examine information and form a conclusion based on that information.
- Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

Course Organization:

Lectures: Cover the highlights of chapters assigned – **not** a substitute for reading. The lecture slides can be obtained from Canvas.

Labs: Programs

Labs must be turned in by 7:40 AM on the due date to be accepted. **I accept no late labs.** You may get your lab signed off early in the virus lab or during those first 15 minutes of lab. On the day that a lab is due, the lab assistant will check it only once and then make notes of what doesn't work. If you are getting it checked in the virus lab, you may fix any errors and then get it re-checked. If you do not complete a lab, you can get partial credit for what you have done, so turn in something! Your lowest single lab will be dropped.

Most labs will contain a prep lab and a main lab. The prep lab is a "warm up" and should get signed off as soon as it is finished. Try to complete this part as much on your own as possible. For the main lab, discussion and even working together is allowed, however, each individual must turn in his/her own work. Each lab must look different, and each student must understand what was done. If labs look too similar, working together will be forbidden in the future.

Labs: Theoretical questions

Most labs will contain theory questions. These questions will be based on lecture and on what you learn from your lab. Points accumulated from this portion of your lab will be part of your homework/classwork grade. So, even if you don't complete the lab, make sure you answer the questions included.

Homework/Classwork:

I do not anticipate you having homework problems assigned from the book. Instead, as previously mentioned, there will be theory questions included in your labs and mentioned above and also problems that you will work on in class. These questions and problems will help prepare you for exams. Classwork grades will be based on your level of participation for that particular assignment. If I observe that you are participating fully, you will get full points. If you are not in class that day, you cannot get any points. I will drop your 2 lowest homework/classwork grades.

Exams: CSC 254 students will have 2 exams, a midterm and a final. CSC 252 students will have 1 exam and a final (AKA midterm). Exams will cover lecture as well as lab material from what was covered since the last exam. The midterm will be cumulative. The exams will **probably** only be written, but will refer to programs you have completed in lab. Students missing any exam for a school function must arrange to take the exam in advance. Students missing exams for any other reason can expect to receive a zero on the exam, except in very rare cases. Exams are scheduled for 9/25, 10/16, and 12/2.

Final Exam for CSC 254: The final exam will be cumulative and will be given **Wednesday at 1:30 PM.**

Grading:

CSC 254		CSC 252	
Homework /classwork	15%	Homework/classwork	15%
Labs	35%	Labs	35%
Exams	15%	Midterm (final)	30%
Midterm	15%	Exam	20%
Final Exam	20%		

Final grades will be determined as follows:

100-93%	A
90-92%	A-
87-89%	B+
83-86%	B

80-82%	B-
77-79%	C+
73-76%	C
70-72%	C-
67-69%	D+
63-66%	D
60-62%	D-
0-59%	F

Attendance:

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes in which a student is registered is considered essential to optimum academic achievement. Therefore, regular attendance and participation in each course are minimal requirements to be met. There are no allowed or excused absences except as approved in writing by the Provost for specific students participating in certain university-sanctioned activities. Excused absences still count toward the 10%-20% limits, but allow students to make up work, quizzes, or tests missed as a result of a university-sanctioned activity. Activities of a unique nature, such as labs or other activities identified clearly on the syllabus, cannot be made up except in rare instances when instructors have given advanced, written approval for doing so. Whenever the number of accumulated absences in a class, for any cause, exceeds ten (10) percent of the total number of class meetings, the faculty member should send an e-mail to the student and the Vice Provost for Academic Administration (VPAA) warning of attendance jeopardy. If more than twenty (20) percent of the total number of class meetings is reported as missed, the faculty member or VPAA may initiate the student's de-enrollment from the course without further advanced notice to the student. If the date of de-enrollment is past the last date to withdraw from a class, the student will be assigned a grade of W or WF consistent with university policy in the Grading section of the catalog. There are no refunds for courses where a de-enrollment was processed. For more details see the PLNU catalog:

http://catalog.pointloma.edu/content.php?catoid=14&navoid=1089#Class_Attendance

Class Enrollment:

It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Academic Accommodations:

While all students are expected to meet the minimum academic standards for completion of their courses as established by the instructors, students with special needs may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Once the student files documentation, the Disability Resource Center contacts the student's instructors and provides written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the university in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with special needs and guarantees all qualified students equal access to the benefits of PLNU programs and activities. For more details see the PLNU catalog:

http://catalog.pointloma.edu/content.php?catoid=14&navoid=1089#Academic_Accommodations

Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

Academic Honesty:

The Point Loma Nazarene University community holds the highest standards of honesty and integrity in all aspects of university life. Any violation of the university's commitment is a serious affront to the very nature of Point Loma's mission and purpose. Violations of academic honesty include cheating, plagiarism, falsification, aiding academic dishonesty, and malicious interference. The details of PLNU's meaning of each of these words can be found in the PLNU catalog at:

http://catalog.pointloma.edu/content.php?catoid=14&navoid=1089#Academic_Honesty

A student remains responsible for the academic honesty of work submitted in PLNU courses and the consequences of academic dishonesty beyond receipt of the final grade in the class and beyond the awarding of the diploma. Ignorance of these catalog policies will not be considered a valid excuse or defense. Students may not withdraw from a course as a response to a consequence.

A student who is caught cheating on any item of work will receive a zero on that item and may receive an "F" for the semester. See the PLNU Catalog for a further explanation of the PLNU procedures for academic dishonesty

(http://catalog.pointloma.edu/content.php?catoid=14&navoid=1089#Academic_Honesty).

Final Exam: Date and Time

The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. Only in the case that a student is required to take three exams during the same day of finals week is an instructor authorized to change the exam date and time for that particular student.

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