

CSC 421 Applied Algorithms and Structures
2015-2016 Winter Quarter
Weds 5:45PM – 9:00PM
Lewis 1508
<http://d2l.depaul.edu/>

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Office Hours: Weds. 2:00 – 3:00, 5:00-5:30

Summary Of Course

This course covers a number of fundamental algorithms including sorting and graph algorithms as well as some general techniques for designing algorithms, such as recursion, divide and conquer, greedy method, and dynamic programming. We will also be analyzing the complexity of our algorithms to determine how they perform and scale.

Learning Objectives

Upon successful completion of this course, students should be able to:

- Use recursion, divide and conquer, dynamic programming, and the greedy approach to design algorithms to solve problems.
- Use graph theory and graph algorithms to solve problems when appropriate.
- Analyze the worst case complexity of algorithms

Prerequisites

Discrete Structures (CSC400) and Data Structures II (CSC403).

Grading Policy

Your overall grade for the course will be computed as follows:

Homework	50%
Practice Midterm	15%
Final Exam	35%

Letter grades will be assigned as follows:

93-100	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+
60-66	D
0-59	F

Textbooks and Printed Resources

Introduction to Algorithms, 3rd edition. Cormen, Leiserson, Rivest, and Stein. MIT Press, 2009.
ISBN: 978-0262033848

Participation Verification

There is an “assignment” on D2L called Participation Verification. This is not a real assignment and will not be graded. It serves only to identify which students intend to take the course. Failure to complete the assignment on time will result in your name being given to administration who will in turn remove you from the course. Just take care of this now. It only takes a minute to submit a small Word document or ASCII text file stating your intention to take the course.

Homework

Throughout the course, students will be given programming problems to solve. It is important to note the due date for each assignment. Multiple problems may be due on the same day, even if they were assigned on different days. For example, a problem given on week 1 might be due in 2 weeks while another problem given on week 2 might be due in 1 week, meaning both problems would be due week 3.

Students must both run their program against a test server and submit their source code via D2L. Be aware that many work firewalls block unknown network connections so you will most likely be unable to run against the test server from work.

All programming problems are due before class on the day they are due. The problems will be discussed in greater detail in class on the day they are due and then students will have a one week "late period" in which they can resubmit their assignment but with a 20 point penalty.

Programming problems can be done in groups of at most 2 students.

Please see the separate document entitled Homework Guidelines for more details about the programming assignment requirements.

Exams

The practice take home midterm will most likely be posted after class #6 and be due before class #7. It is called a "practice" midterm because it is worth significantly less than the final exam (15% vs. 35%) and because students can work in groups and will be allowed to refer to their books and their class notes. You will need to use Microsoft Word to open the exam and write in your answers. You must submit your exam via D2L before the deadline. Late exams will not be accepted and will receive a score of 0.

The final exam will be closed book and closed notes, except for a single 8.5" by 11" sheet of notes (both sides) which will be collected with the exam. For students in the "live" section, the final exam will take place at 5:45PM on Wednesday, March 16 in the usual classroom. Students in the online learning section must take the exam either Wednesday March 16 or Thursday March 17. Make sure to read CDM's policies for Online Students (especially the part about exams:

<http://www.cdm.depaul.edu/onlinelearning/Pages/default.aspx>

so that you know about your rights and responsibilities as an online learning student. All students must take the exam at the scheduled date and time.

Warning to Online Students

Make sure you are able to register for a proctored Final Exam. Even if you do not intend to register now, check that you have the option. If you do not, you are in the live section and must take the exam in the regular classroom at the regular time.

Required Tools

Students will be implementing some algorithms in Java. You must have Java 1.8 JDK installed on your machine in order to compile and execute your solutions to programming assignments.

Email and Forums

Everyone must subscribe to the D2L forums for the course. When communicating with the class, I will post there. By subscribing, those posts will be sent to you via email.

Questions that are not of a personal nature and which do not include code should be posted on the D2L forum. This allows other students the opportunity to answer your question as well, which means you might get an answer faster.

For personal questions or questions that involve actual homework code, please email me directly. To make email communication as smooth as possible, please make sure to do the following:

- Students should make sure their email listed under "demographic information" at <http://campusconnect.depaul.edu> is correct. All my emails to you will go to that address.
- Send questions from an email address that identifies who you are. You have the best chance of getting through the email spam filter if you use your DePaul email address. You have the greatest chance of the email being filtered or of me ignoring it if you send it from an address that I cannot recognize immediately as a student in my class. (I once had a student send me email from way2sexy@hotmail.com and complain 2 weeks later that I wasn't answering his email.)
- Include the course number in the subject of all emails. If I receive an email from you without the course number (CSC421) in the subject, I will not notice that it is from a student and there will be a delay in receiving a reply. If I do not recognize what course you are in, my first response will be my asking you which course you are in. This will of course add to the delay in getting your actual question answered, so just avoid all this and include the course number in the subject line.
- If your question was answered in the lecture or in the discussion forum, I will simply refer to the lecture or forum post. So if you did not understand something I said in class or in an email, be specific. Point out exactly what you didn't understand in my prior communication so that you don't get the generic reply of watch the video/read the email.

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in CampusConnect.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/>. If you have any questions be sure to consult with your professor.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at: cdm.depaul.edu/enrollment.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.

To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: csd@depaul.edu.

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