

COP 3503C – Computer Science II - Spring 2024 Syllabus

Course Prerequisites: COP 3502, COT 3100

Course Credit Hours: 3

Course Web Page: <http://www.cs.ucf.edu/courses/cop3503/spring24>

Course Time: Tuesday, Thursday 3:00 - 4:15 pm **Course Location:** CB1-121

Instructor: Arup Guha

Office: HEC-240

Email: dmarino@ucf.edu

Office Hrs: <http://www.cs.ucf.edu/~dmarino/ucf/OH.html>

I do NOT check my WebCourses email. Please email me at dmarino@ucf.edu to contact me.

Teaching Assistant Information: <http://www.cs.ucf.edu/courses/cop3503/spring24/TAinfo.html>

Course Objective: This course explores specific algorithmic techniques in more detail than CS1 and applies these to some new problems not explored in CS1. Also, more technical algorithmic analysis will be done in order to verify the efficiency of the algorithms discussed. Finally, a couple new data structures will be introduced.

Textbook: **No required textbook.** Any of the following books will be reasonable references: Johnsonbaugh, Schafer (ISBN: 0-02-360692-4), Cormen, Leiserson, Rivest, Stein (ISBN-13: 978-0072970548), Weiss (ISBN-13: 978-0-13-257627-7), Levitin (ISBN: 0-321-35828-7), Dasgupta, Papadimitriou, Vazirani (ISBN-13: 978-0-07-352340-8)

Grading: The final letter grade will be based upon the six items listed below:

Item	Percentage
Exam #1	20
Exam #2	20
Final Exam	25
6 Programming Assignments	21 (P1=1%, Rest=4%)
Recitation Attendance	5
Solving Selected Kattis Problems	9 (3% each) Submit 3 of 5

At the end of the course, I will choose grade lines for each letter grade. +/- **grades will be assigned when deemed appropriate.** For more on how I choose my grade lines, please read my grading philosophy posted off my teaching archive page.

Note: This grading breakdown is subject to change. Any changes will be discussed in class and on Webcourses announcements. As previously mentioned, in the past I made changes to the class syllabus based on class behavior. In some classes I changed the syllabus to include class attendance in the middle of the semester and as previously mentioned, I threw out an entire exam grade due to academic misconduct. In classes where I've had a vast majority of responsible students, I have not needed to make any changes to the class grading system.

Tentative Schedule

Week	Tuesday Class	Thursday Class	Lab Topic
Jan 8-12	Data Structs in Java	Data Structs in Java	Using Kattis Lambda Sorting P1 Due
Jan 16-19	Backtracking	Backtracking	Kattis Problem
Jan 22-26	Disjoint Sets	2-4 Trees	Lab Worksheet P2 Due
Jan 29-Feb 2	R-B Trees	Skip Lists Exam #1 Review	Exam Review
Feb 5 – 9	Exam #1	Algorithm Analysis & Amortized Analysis	Kattis Problem
Feb 12 – 16	Lower Bound Sort/Bucket, Radix Sort	Intro Greedy Algorithms	Lab Worksheet P3 Due
Feb 19 – 23	Huffman Coding	Graphs, DFS, BFS	Kattis Problems
Feb 26 - Mar 1	BFS applications, Topological Sort	Dijkstras	Kattis Problems
Mar 4 – 8	MST	Network Flow	Exam Review
Mar 11 – 15	Exam #2 Review	Exam #2	Go Over Exam #2 P4 Due
Mar 18 – 22	Spring	Break	
Mar 25 – 29	Div&Conq - Int Mult, Tromino	Div&Conq – LCS	D/C Worksheet
Apr 1 – 5	DP - Fib, LCS, Change	DP- Subset Sum, 0/1 Knapsack	Kattis Problem P5 Due
Apr 8 – 12	Floyd-Warshall's	MCM	DP Worksheet
Apr 15 – 19	More DP	Final Exam Review	Exam Review P6 Due
Apr 22 – 26		Final Exam 1 pm – 4pm	

I may change this schedule, thus class attendance is important. This is a general time frame only and is subject to the needs of the class. It will be altered without notice, but will generally follow the same progression. At the end of each class I will tell you what we will be discussing during the next class period. I will attempt to place notes on the course web site (prior to each day's class) which will be the basis for that day's lecture.

Recitations

Recitation will have two different activities. Some days, labeled exam review/lab worksheet, you'll work out practice problems on paper to help reinforce ideas from lecture. These problems are designed to help you with preparing for exams. On five class days, you'll be given a problem to work on from the website open.kattis.com. By the end of the semester, you must complete three of the five designated problems and submit these over Webcourses. In addition to your code, you must submit a screenshot from Kattis with your username showing the accepted status of your program, and you may be asked to submit other relevant documents. These will be due via Webcourses on the Wednesday following when they are presented in recitation. The intention is that a **majority** of the work is done in recitation and that the extra time is given to finish up the work.

You are required to attend one recitation (lab) per week. Unless there are complications, please attend the lab for which you are signed up. TAs will take attendance at every lab. There are 14 recitation meetings and attendance is worth 5% of the course grade. The way the grade will be given is that you are given 4 freebies and each day you attend is worth half a percentage point. **I normally give at most 1 or 2 freebies. The purpose of four freebies is for me to avoid dealing with illness, once or twice work issues, etc. on an individual basis. If you have a reoccurring issue for which you'll miss more than four labs, contact me and I'll see if we can come up with some work around.** Thus, you get full credit as long as you attend at least 10 recitations. **Note: You MUST attend ALL 50 minutes of a recitation to get credit.** (If a TA claims you weren't in attendance all 50 minutes, I will take their word for it.) Unless there is a long term problem, there are no excused absences for recitation.

Programming Assignments

All programming assignments will be turned in over WebCourses. Due date/time will be specified for each program within WebCourses ONLY. In particular, the instructor will NOT answer any questions relating to due dates since this information is available for students in WebCourses. **No late assignments are accepted!!!** You must submit your program (in whatever condition) at that point. You'll get partial credit if the program is not completely done. You'll get no credit if you don't submit the program. **All programs must be done in Java (no exceptions), and be compatible with Java 21.** The instructor is not responsible for making sure that students use WebCourses properly. **If a student completes an assignment but doesn't properly submit the assignment for any reason (using the wrong browser, not hitting the submit button, internet error, etc.) the grade for the assignment is a zero.**

THE ONLY VALID DUE DATES ARE THOSE POSTED ON WEBCOURSES.

My personal advice is to submit all assignments **AT LEAST THREE HOURS BEFORE THE POSTED DEADLINE.** Too often, students wait till the last minute only to miss the deadline due to network issues. **IN CASES WHERE A SUBMISSION IS LATE (EVEN BY A SECOND), A GRADE OF ZERO WILL BE GIVEN TO THE SUBMISSION.**

If anyone is caught getting unwarranted assistance with any of these programs and the proof that they did so is clear, a report will be turned into the Office of Student Conduct. The grade consequences will depend on the severity of the infraction and range from lowering the course grade by a full letter to receiving an automatic F in the course.

Community Service Opportunity

If students want to get an automatic perfect 100% for the last programming assignment, which is worth 4% of the course grade, students may perform 5 hours (or more) of community service **with a registered 501 (c)(3) organization.** If you take this option, then you will automatically earn 100% for Program 6 grade. In order to get this credit, you must complete the community service and turn in the requisite form signed directly to me (in my hand) by **April 4, 2024.** All grades for the community service will be posted in the P6 column by April 8, 2024. If you don't see your grade there by April 9th, then please do P6.

Exam and Program Regrades

Any regrades must be requested to the instructor within ONE WEEK of when the grade was posted on WebCourses. All students may request three regrades during the course of the semester. The reason for this limitation is that too often students ask for a regrade without fully understanding the feedback they've received and the corresponding grading criteria. As a consequence, a majority of regrade requests I've received either don't have any merit or don't adhere to the grading criteria for the assignment. By limiting the total number of regrade requests per student, I hope to remove trivial requests (for a couple points) and requests that deal with not understanding the grading criteria. If points were added incorrectly on an exam, this change does NOT constitute a regrade. **NO REGRADE REQUESTS CAN BE MADE ON THE LAST ASSIGNMENT OR FINAL EXAM.**

Make Up Exams, Assignments, Quizzes

If a student is unable to complete an assignment on time or take an exam or quiz on time due to a serious family, medical or work situation, he or she must contact the instructor **BEFORE** the due date and ask for an extension. Extensions will be granted in situations the instructor deems reasonable. If an emergency occurs that prevents contacting the instructor before the due date, then the student should contact the instructor as soon as possible and reasonable accommodations will be made. Note: for assignments, a different replacement assignment will be given so that the regular assignment solution can be posted on time.