COP 3502 Computer Science I – Spring 2017 Syllabus

Course Prerequisites: COP 3223 (Introduction to C Programming)
Class Time: TR 4:30 - 5:45 pm
Class Location: CB1-121
Course Web Page: http://www.cs.ucf.edu/courses/cop3502/spr2017

Lecturer: Arup Guha
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Phone Number: 407-823-1062
Office Hours: TBA (see http://www.cs.ucf.edu/~dmarino/ucf by Jan 13, 2017)

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Anahita Davoudi	anahita
Sungchul Jung	sungchul
Sandesh Sharma	tsandesh23

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

TA Office Hours and Location: Will be posted on the course web page by January 13th, 2017.

Course Objectives

1) Introduce known algorithms and general problem solving techniques.
2) Provide software skills in C.
3) Introduce elementary data structures.
4) Introduce searching and sorting techniques.

Reference Books: Any book on data structures will do for this course. The following book is available in the bookstore: Data structures, algorithms & software principles in C, Thomas B. Standish, Addison – Wesley (ISBN – 0-201-59118-9)

***Tentative* Grading Procedures**

The final letter grade will be based upon the five items listed below**. Plus/minus grades will be issued, when deemed appropriate.**

Item	Weight
Birthday Activity	1%
Recitation Programs	8% total - 4% for each of these two
Recitation Attendance	6%
Exam #1	15%
Exam #2	15%
Final Exam*	25%
"Old" Homework Assignments	10% total - 2% for each of these five
Quizzes on "Old" Hmk Assignments	10% total - 5% for each of these two
"New" Homework Assignments	10% total - 5% for each of these two

In addition to this grading breakdown, in order to pass the course with a C or higher, you must earn a 40% or higher on the final exam. (Thus, if you have a 75% in the course but earn a 30% on the final, you still get a C- in the course even though your percentage may qualify for a B.) Rather than use a "strict" 90 – 100 grading scale, I adjust my grade lines to account for difficult exams. My webpage discusses this process in detail: http://www.cs.ucf.edu/~dmarino/ucf/transparency/.

* - denotes that a portion of the final exam grade may come from a community service opportunity described later in the syllabus.

Note: This grading breakdown is subject to change. Any changes will be discussed in class. (Note: Changes may not be posted online, so it's important to attend class.) In the past I made changes to the class syllabus based on class behavior. For example, in past classes where I ascertained that too many students were skipping class, I would make class attendance part of the grade, but only announce this in class. I reserve the right to make any of these changes or any other changes if I feel that the class will benefit from. 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.

Recitation Programs

On designated weeks you will be asked to bring a laptop to recitation. On these weeks you will pair up with someone to discuss possible ways to attack the problem, but then code the solution separately. For the 50 minutes in lab, everyone must be engaged working on the problem. Each individual must submit one lab program out of the first three and one lab program out of the last three given via WebCourses by the deadline. In particular, who turns in what lab program will be delineated by last name (to ensure a fair workload for the TAs). The specifics of this will be announced on WebCourses. Please pay attention to these directions. If you don't turn in the lab program you are supposed to, **you will get a ZERO on it.** Also, for these programs, our final test data will be posted. This means that a higher portion of your grade will be based on execution points than usual. Please keep that in mind when working on these and double/triple check that your program runs correctly on the posted data.

Recitation Attendance

Since attendance strongly correlates with success in this course, recitation attendance will count for 6% of the course grade. You will be allowed to miss two days without penalty to your grade. If you have legitimate reasons (multiple work trips, etc.) to miss, then approach me in advance and I'll work something out. **But, I've built in two freebies to account for sick days or work days or whatever unexpected thing may come up. So, please don't approach me if it's a one or two time thing.**

Programming Assignments

All programming assignments will be turned in over WebCourses and must be done in C.

Old Programming Assignments

For the old programming assignments, it's encouraged that you work completely alone, but you will be allowed to talk with other students at a high level about how to solve the problems. The test data for these assignments won't be posted before their due date but students ***are encouraged*** to use WebCourses to share test data with one another, ***only for the old assignments***. The goal of these assignments is for students to learn classical techniques to solve certain problems.

The reason the assignments aren't worth much is that I've used them before and it's likely that old solutions and data are floating around somewhere and I don't want students who cheat (hard to catch sometimes) to be rewarded greatly. But, I think the assignments are still valuable and want to give good students the opportunity to learn from them. To mitigate the effect that cheating might have, I'll give two quizzes in recitation based on the content of these old assignments. These quizzes will be designed such that if you really understand the concepts behind the assignments, then you'll do well on them.

As always, if you are having trouble with one of these programs, your first step should be to come and see me or one of the TAs for the course. We'll provide guidance and attempt to help you understand the necessary concepts so that you can finish your solution to the given problem.

New Programming Assignments

I want students to have the challenge of solving new problems for which there definitely isn't data or old solutions floating around. I will create two new assignments for this semester and **these programs must be done individually. *In particular, you may ONLY get help from myself or teaching assistants for this course.*** Here are some examples of things that would be academic misconduct (and earn a letter grade lowering and a Z designation):

1) Copying 3 or more lines of code from another student or website
2) Viewing a copy of someone else's solution to the problem or a very similar problem.
3) Posting your solution on any public website
4) Posting a reward to solve the problem on any public website.
5) Discussing specific solution ideas with other students.

You may help a fellow student debug a single specific error, but that's the extent to which one student can help another.

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.**

Note: To handle the different weighting of the new and old programs, the new programs will be out of 100 points and the old programs will be out of 40 points and both will be in the same "category" in WebCourses.

Community Service Opportunity (for 5% of the course grade)
If you perform 5 hours (or more) of community service with a ***registered 501(c)(3) organization***, then you will receive an automatic 100% for 5% of the course grade and then your final exam score will count for 20% of the course grade instead of 25% of the course grade. In order to get this credit, you must complete the community service and turn in the requisite form signed by **April 13, 2017, at the BEGINNING of class.**

There are no exceptions to this rule. If you do your community service and submit the form to me after the beginning of class, on 4/13/17, then no credit will be given and the final exam will count for 25% of your course grade. This happened to two students the last time I taught this class. This is why I am warning you....You may submit the form early in the semester and I encourage you to do so. All grades for the community service will be posted by April 20th, well before the final exam.

Exams
Students will be allowed one sheet of notes for the first two exams and three sheets of notes for the final exam. However, calculators will NOT be allowed for any of the exams.

Alternate Dates for Homework/Exams
If a student is unable to complete an assignment on time or take an exam 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.

Correcting Incorrectly Posted Grades
Students have one week after a grade is posted on WebCourses to ask for either a regrade or to get the grade fixed, if it's entered incorrectly. The purpose of this rule is to avoid situations where students approach me after grades have been turned in with incorrectly recorded grades from a long time ago. Changing these grades is difficult and time consuming and it's in everyone's best interests if grades are corrected as soon as possible. I am hoping that adding this policy will ***encourage*** students to step forward immediately in situations where a grade is recorded incorrectly. Taking care of these cases early is ideal for all students AND staff.

Tentative **Schedule and Assignments**

Week	**Lab(All Days)**	**Tuesday**	**Thursday**	**Programs**
Jan 9	Cancelled	intro, array problem	malloc	
Jan 17	LP1 - Prime Sum	calloc, realloc examples	binary search, base conversion	
Jan 23	Rec Sheet	Mathematical Tools	Big-Oh, Use of sums	**P#1 DUE**
Jan 30	Debugging Tutorial	Recursion	Recursion, Rec. Rel.	
Feb 6	Exam #1 Review	Recursion	n^2 sorts, Merge Sort	**P#2 DUE**
Feb 13	LP2 - Vacation	Quick Sort, Quick Select	**Exam #1**	
Feb 20	LP3 - Stones	Linked Lists	Linked List Variants	**P#3 DUE**
Feb 27	**Rec Quiz #1**	Stacks	Queues	
Mar 6	Exam #2 Review	Bin Trees	Bin Trees	**P#4 DUE**
	SPRING	**BREAK**		
Mar 20	LP4 - Duck	Exam Review	**Exam #2**	**P#5 DUE(N)**
Mar 27	LP5 - Norm Form	Tries	AVL Trees	
Apr 3	LP6 - AVLTreeHeist	Binary Search Applications	Heaps	**P#6 DUE**
Apr 10	**Rec Quiz #2**	Hash Tables	Bitwise Operators	
Apr 17	Final Exam Review	Backtracking **COMSERV**	Final Exam Review	**P#7 DUE(N)**
Apr 24	No lab	No class	**FINAL EXAM 4 - 7 PM**	

This schedule is tentative. The only items guaranteed to be on the listed dates are the quiz and three exams. All other items may be shifted based on how the class actually runs. These details will generally only be discussed in class verbally.

Note: All program and recitation program due date/times will ONLY be posted on Webcourses. Please go there to find when each of these assignments is due.