COP 3502H
Honors Computer Science I - Spring 2012
Syllabus

Course Prerequisites: COP 3223 (Introduction to C Programming)
Class Time: Tuesday and Thursday 9:00 –10:15 am
Class Location: BA – 212
Course Web Page: http://www.cs.ucf.edu/courses/cop3502h/spring2012/

Instructor: Sarah Buchanan
Office: HEC – 201
Email: sbuchanan@knights.ucf.edu
Office Hours: TR 10:30am – 12pm (email me if there's a conflict for you and I can add some more office hours)

Course Objectives:
1) Provide an introduction to the field of computing: The central concept that underlies computer science is the design and implementations of ***algorithms*** to solve specific problems.

2) Provide Conceptual Content and Software Skills: The lecture component focuses on conceptual tools for constructing and analyzing algorithms – Time Complexity and recursion, while the lab component focuses on implementation issues involved in C programming.

3) Introduce elementary data structures: Arranging data in arrays, linked lists, stacks, queues, binary trees, binary heaps and hash tables.

4) Introduce searching and sorting techniques.

Course Textbook: Data structures, algorithms & software principles in C, Thomas B. Standish, Addison – Wesley (ISBN – 0-201-59118-9) (Note: Any book on data structures ought to be sufficient, since none of the assignments will come directly from the book.)

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

Item	Percentage
Exam #1	20
Exam #2	20
Final Exam	20
Individual Homework Assignments	25 (5% each)
Thursday Problems	10 (5% each)
Quizzes	5% (1% each)

Note: This grading breakdown is subject to change. Any changes will be discussed in class.

Programming Assignments
All programming assignments will be turned in over WebCourses. All programs must be done in C. The 5 homework assignments will be **individual** assignments. Meaning you may ONLY consult with me.

Thursday Problems
Almost every other Thursday (except when exams are given), students will be asked to work in pairs on a programming problem. Each week a couple pairs of students will be assigned to complete the Thursday problem and turn it in for credit. Each student must submit two Thursday problems, each of which will be worth 5% of the course grade. (Note: Each submission counts for both students in the group that submits the program. Groups may change from week to week.)

Community Service Opportunity
In lieu of the last individual programming assignment (program 5), you may perform 5 hours (or more) of community service. If you take this option, then you will automatically get a 100 for program 5. In order to get this credit, you must complete the community service and turn in the requisite form signed by the **end of March.** All grades for the community service will be posted under the column P5 two weeks before the last program is due.

Late Assignment Policy
Late homework assignments will be accepted for all of the individual homework assignments, but will be assessed a late penalty. In particular, assignments will be accepted upto 48 hours after the due date of the assignment. If an assignment is less than 24 hours late, a 10% penalty will be assessed. If an assignment is in between 24 and 48 hours late, a 20% penalty will be assessed. ***No late assignments will be accepted for the Thursday problems.***

Exams
For the exams you will typically be allowed a few pages of notes as an aid. The details will be discussed in the class before each exam. Calculators of any sort are not allowed on exams.

Academic Dishonesty
UCF faculty members have a responsibility for your education and the value of a UCF degree, and so seek to prevent unethical behavior and when necessary respond to infringements of academic integrity. Penalties can include a failing grade in an assignment or in the course, suspension or expulsion from the university, and/or a "Z Designation" on a student's official transcript indicating academic dishonesty. Examples of academic dishonesty: copying **any** code from current or previous students or the internet (software similarity programs are used to compare current and previous student programs), and sharing information on exams or quizzes.

Tentative Schedule

Week	Tuesday	Thursday	Announcements
1/9 – 1/13	Syllabus / C Review / Dynamic Memory Alloc	Linked List Intro/ Linked List Operations	HW#1 Assigned -- C Review
1/16 – 1/20	More Linked Lists	Problem Solving Day – Linked Lists	
1/23 – 1/27	More Recursion		HW#1 Due Friday PM HW#2 Assigned – Linked Lists
1/30 – 2/3	Algorithm Analysis Binary Search, Sorted List matching	Problem Solving Day - Recursion	
2/6 – 2/10	More Alg Analysis / Summations Exam Review	Exam 1	
2/13 – 2/17	Summations/ Recurrence Relations	Problem Solving Day – Binary Search	HW#2 Due Friday PM HW#3 Assigned -- Recursion
2/20 – 2/24	Stacks	Queues	
2/27 – 3/2	Binary Trees	Problem Solving Day --Stacks	
3/5 – 3/9	SPRING BREAK	SPRING BREAK	
3/12 – 3/16	More Binary Trees Review	Exam 2	HW#3 Due Friday PM HW#4 Assigned – Stacks/Queues or BST's
3/19 – 3/23	WITHDRAWAL DEADLINE Sorting n^2	Problem Solving Day - Trees	
3/26 – 3/30	Heaps	Heaps	HW#4 Due Friday PM HW#5 Assigned
4/2 – 4/6	AVL	AVL	
4/9 – 4/13	Hash Tables BackTracking	Problem Solving Day	
4/16 – 4/20	Graphs	Review	HW#5 Due Friday PM
4/23 – 4/27	FINAL EXAM 7am Tuesday 4/24		