

CSC 172 : DATA STRUCTURES

SPRING 2015

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Texts: Data Structures and Algorithm Analysis in JAVA, 3rd Edition
by M. A. Weiss
The C Programming Language
by B. W. Kernighan and D. M. Ritchie

Some nice optional texts :

Structure and Interpretation of Computer Programs
by H. Abelson and J. Sussman with J. Sussman
Foundations of Computer Science
by A. Aho and J. Ullman

Grad TA Staff:

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Lectures: T-R 2:00PM-3:15PM, Dewey 1-101 (CRN 28555)

Attendance is not required in lecture. However, changes to the assignments, schedule, syllabus, and deadlines may be announced only in lecture. Quizzes given in lecture may not be announced in advance and cannot be made up.

Labs:

Students must register for one lab session.
Labs begin on January 21st.
Students are expected to know the names of their lab TAs.

Workshops:

Workshops are scheduled during the first week of class.

Workshops being on January 25th.

Attendance is required and counts for the grade.

Grading:

Minor (up to 10%) adjustments may be made to the weights and number of assignments at the discretion of the instructor.

- Exam 1 = 10%
- Projects (3 or 4) = 40%
- Exam 2 = 10%
- Quizzes (10) = 10%
- Labs (20) = 25%
- Workshop (participation required) = 5%

Labs have hard deadlines : zero credit for being late.

Projects have soft deadlines : -2% per hour.

Workshop grade will be based on class participation.

ACADEMIC HONESTY : Students are strongly encouraged to collaborate, work together, and share ideas. (A good recommended procedure is to get together in a group, solve the problem on a white board, but do not take any notes out of the session. Once you understand the solution, it is easy to implement on your own.) However, each assignment must be the unique product of an individual. No group projects. Standard academic honesty principles apply – in short, be certain that you are the author of everything you hand in. Do not electronically copy, cut/paste any code that you did not first type in yourself. Do not give your work to other students in any form. All sources not your own must be properly referenced in program comments and written documentation. Any and all cases of suspected academic misconduct must be reported to the board of academic honesty.

Syllabus and Lecture Schedule:

Read the assignment before the lecture.

If you are unable to do the exercise on your own after the lecture, then you should go to the help session.

This schedule is subject to change without notice at the discretion of the instructor.

DATE	READING	LECTURE	SELF TEST EXERCISE
1/15	Weiss Chap 1.1->1.4	INTRODUCTION	
1/20	Weiss 1.5 -> 2.4 (p38) K&R Chap 1	Java Generics Algorithm Analysis	Weiss 1.5,1.7,1.12 K&R 1-1,1-15,1-22
1/22	Weiss 3.1->3.3 K&R Chap 2	Linked Lists	Weiss 1.13, 14, 1.15
1/27	Weiss 3.4->3.5 (p76) K&R Chap 3	Stacks & Queues	W: 2.1, 2.7,2.11,2.12
1/29	Weiss 4.1 -> 4.2 K&R Chap 4	Trees	W: 3.7, 3.9 KR:4-4,4-7
2/3	Weiss 4.2.-4.3 (p114) K&R 5.1,5.2,5.3	BS Trees	KR: 5-1,5-2
2/5	Weiss 4.4 K&R 5.4, 5.5	AVL Trees	W:3.8,3.10,3.28 KR: 5-3, 5-6
2/10	Weiss 4.5-4.8 (p152) K&R 5.6	Splay Trees, B Trees	W: 4.1 -> 4.9 KR: 5-7
2/12	Weiss 5.1-5.4 K&R 5.7, 5.8, 5.9	Sets & Maps	W: 4.19, 4.21, 4.26 KR: 5-9
2/17	Weiss 5.4-5.9 (p190) K&R 5.10 -> 5.12	Hashing	W: 4.31, 4.41, 4.51 KR: 5-14, 5-20
2/19	Weiss Chap 6 K&R 6.1 -> 6.3	Hashing	W: 5.1,5.17 KR: 6-1
2/24	Weiss 6.1-6.4 (228) K&R 6.4, 6.5	Heaps	W: 6.2, 6.3 KR: 6-3,6-4
2/26	Weiss 6.5-,6.9 K&R 6.7-6.9	Priority Queues	KR: 6-5

3/3	(p271)	Overflow & Review	
3/5	Cumulative	EXAM 1	
3/10		SPRING BREAK	
3/12		SPRING BREAK	
3/17	Weiss 7.1-7.4 (324) K&R 7.1, 7.2	Simple Sorts C I/O	W:7.1,7.2,7.4,7.5 KR: 7-1
3/19	Weiss 7.5, 7.6 K&R 7.3	Heapsort, Mergesort C Args	W: 7.11,7.12,7.15,7.17 KR: 7-3
3/24	Weiss 7.7,7.8 (367) K&R 7.4	Quicksort C Scanf	W: 7.19, 7.20, 7.30 KR: 7-4, 7-5
3/26	Weiss Chap 8 K&R 7.5	Disjoint Sets C Files	W: 8.1, 8.7
3/31	Weiss 9.1, 9.2 (410) K&R 7.6	Graphs C Errors	W: 9.1, 9.3
4/2	Weiss 9.3, 9.4 K&R 7.7	Shortest Path C Lines	W: 9.5, 9.7a,9.10 KR: 7-6
4/7	Weiss 9.5,9.6,9.7 (453) K&R 7.8	Min Span Trees Miscellaneous	W: 9.15
4/9	Weiss 10.1 K&R 8.1	Greedy Algorithms C stdio	W: 10.3, 10.10
4/14	Weiss 10.2 (496) K&R 8.2	Divide & Conquer C low level I/O	W: 10.22, 10.24
4/16	Weiss 10.3 K&R 8.3	Dynamic Programming	W: 10.28, 10.31, 10.35
4/21	Weiss 10.4 K&R 8.4 (539)	Randomized Algorithms OCCU	10.36 KR: 8-1
4/23	Weiss 10.5	Backtracking	W:10.42, 10.43
4/28	(582)	EXAM 2	