Daily preparation guide

Study the material listed in the preparation section prior to attending class that day. Try to formulate precise questions concerning the parts you don’t understand or the importance of the material.

Thursday, August 18

Introduction:
- Classes begin
- Review of syllabus
- Review of order notation
- Review of logarithmic identities
- Review of sorting algorithms

Tuesday, August 23

Preparation:
- Chapter 3, Growth of Functions
- Example prerequisite material questions: http://beastie.cs.ua.edu/concepts/cs/ds/

Thursday, August 25

Prerequisite material

Tuesday, August 30

Prerequisite exam

Thursday, September 1

Preparation:
- Chapter 4, Divide-and-Conquer (skip section 4.6)
- Example questions: http://beastie.cs.ua.edu/concepts/cs/al/recurrences.html

Monday, September 5

Preliminary assessment of programming assignment #1 due

Tuesday, September 6

Preparation:
- Chapter 6, Heapsort
- Chapter 7, Quicksort
- Example questions: http://beastie.cs.ua.edu/concepts/cs/ds/sorting.html

Thursday, September 8

Preparation:
- Section 8.1, Lower bounds for sorting
- Example questions: http://beastie.cs.ua.edu/concepts/cs/ds/sorting.html
Tuesday, September 13
Preparation:
- Chapter 9, *Medians and Order Statistics*

Friday, September 9
Programming assignment #1 due

Thursday, September 15
Preparation:
- Chapter 12, *Binary Search Trees*

Tuesday, September 20
Preparation:
- Chapter 13, *Red-Black Trees*

Thursday, September 22
Preparation:
- Problem 13-3, *AVL trees*

Tuesday, September 27
First concept exam:
- Prerequisite material
- Solving Recurrences
- Selection in linear time
- Self-balancing search trees

Thursday, September 29
Web search: memoization

Tuesday, October 4
Preparation:
- Chapter 15, *Dynamic Programming*

Thursday, October 6
Preparation:
- Section 8.2, *Counting Sort*

Tuesday, October 11
Preparation:
- Section 8.3, *Radix Sort*
- Section 8.4, *Bucket Sort*
Thursday, October 13
Preparation:
- Chapter 17, *Amortized Analysis*

Tuesday, October 18
Preparation:
- Problem 19-2, *Binomial Heaps*

Thursday, October 20
Second content exam:
- Dynamic programming
- Linear sorting
- Binomial heaps

Monday, October 24
Preliminary assessment of programming assignment #2 due

Tuesday, October 25
Preparation:
- Sections 19.1 — 19.3, *Fibonacci Heaps*

Wednesday, October 26
Last day to drop a class

Thursday, October 27
Preparation:
- Sections 19.4 — 19.3, *Fibonacci Heaps*

Friday, October 28
Programming assignment #2 due

Tuesday, November 1
Preparation:
- Chapter 21, *Disjoint Sets*

Thursday, November 3
Preparation:
- Chapter 22, *Elementary Graph Algorithms*

Tuesday, November 8
Preparation:
- Chapter 23, *Minimum Spanning Trees*
Thursday, November 10
Preparation:
- Section 24.3, Djikstra’s Algorithm

Tuesday, November 15
Preparation:
- Section 34.1 — 34.3, P and NP

Thursday, November 17
Preparation:
- Section 34.4 — 34.5, NPC proofs and problems

Monday, November 21
Preliminary assessment of programming assignment #3 due

Friday, November 25
Programming assignment #3 due

Tuesday, November 29
Dead week

Thursday, December 1
Dead week, last day of class

Thursday, December 8
Final exam (cumulative), 11:30am to 2:00pm