

# CS 2223, Algorithms

## Class Schedule

### B term, 2012\*

This schedule is an estimate (version of November 14, 2012). Timing of material and the topics of homework and projects may change as the term progresses. The readings are given as chapters and sections in CLRS, Third Edition.

1. Tues, 23 Oct: Intro, and Lua
2. Thurs, 25 Oct: Sorting and Rates of Growth **Reading:** 1, 2.1–2
3. Fri, 26 Oct: Big-O, Theta, Omega:  $O, \Theta, \Omega$  **Reading:** 3.1
4. Mon, 29 Oct: Hurricane Sandy
5. Tues, 30 Oct: Big-O, Theta examples and properties
6. Thurs, 1 Nov: Graphs and breadth-first search **Reading:** 22.1–2
7. Fri, 2 Nov: Depth-first search **Reading:** 22.3
8. Mon, 5 Nov: DFS applications **Reading:** 22.4–5  
**Test 1:** *Rates of Growth*  
**Project 1:** *Measuring Sorting*
9. Tues, 6 Nov: DFS **Reading:** 16.1–2
10. Thurs, 8 Nov: Greedy Algs. **Reading:** 16.3
11. Fri, 9 Nov: Divide and Conquer **Reading:** 2.3, 4.1  
**Test 2:** *Graph Traversal*
12. Mon, 12 Nov: Mergesort and Quicksort **Reading:** 7  
**Project 2:** *Applying graph search*
13. Tues, 13 Nov: Priority Queues and Heapsort **Reading:** 6
14. Thurs, 15 Nov: Recurrences: Analyzing D&C algs **Reading:** 4.3–5
15. Fri, 16 Nov: Heaps and Huffman Codes **Reading:** 15.1–2

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16. Mon, 19 Nov: Dyn. Prog. Algs. **Reading:** 15.3–4
17. Tues, 20 Nov: Dyn. Prog. Algs. **Project 3:** *Make a Market (Heaps)*
- Thanksgiving, 22–23 Nov**
18. Mon, 26 Nov: Graphs: Shortest Paths. Dijkstra’s Alg. **Reading:** 24 Intro, 24.3  
**Test 3:** *Greedy, Divide & Conquer Algs.*
19. Tues, 27 Nov: Bellman-Ford **Reading:** 24.1
20. Thurs, 29 Nov: Minimum Spanning Trees<sup>1</sup> **Reading:** 23
21. Fri, 30 Nov: Minimum Spanning Trees **Project 4:** *Divide & Conquer*
22. Mon, 3 Dec: All-pairs shortest paths **Reading:** 25.1  
**Test 4:** *Dynamic Algorithms*
23. Tues, 4 Dec: Network Flow **Reading:** 26.1
24. Thurs, 6 Dec: Network Flow, 2 **Reading:** 26.2
25. Fri, 7 Dec: Special Topic: Nondeterministic Algs. and P vs. NP
26. Mon, 10 Dec: Special Topic: Public-Key Crypto  
**Project 5:** *Bellman-Ford*
27. Tues, 11 Dec: Review
28. Thurs, 13 Dec: **Test 5: Cumulative**

**Homework Assignments.** Homework assignments will be due on Wednesday evenings by midnight. Homework 1 is due on 1 November; 2, on 7 November; 3, on 19 November; and 4, on 28 November. Use <http://turnin.cs.wpi.edu/>.

Handwritten homework may be scanned or photographed—if legibly written and photographed in strong light with sharp focus—and then submitted as a zip file of PDFs or JPEGs. You may also use document preparation software.

**Projects.** Projects are due by the end of the day given, meaning any time before midnight. Use <http://turnin.cs.wpi.edu/>.

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<sup>1</sup>Prof. Dougherty will stand in 29–30 November. I’ll be away.