

## CS 410 Summer 2000 Tentative Syllabus

- 1 M Introduction, ADTs, sorting, asymptotic notation
- 2 T recurrence relations, master theorem
- 3 W sorting: insertion, merge
- 4 R graphs, trees, heaps
- 5 F priority queues, sorting: heapsort
  
- 6 M sorting: quicksort
- 7 W sorting: lower bound on comparison sorts, order statistics
- 8 R sorting: linear time sorts
- 9 F hashing: open address
  
- 10 M linked lists, hashing with chaining, universal hashing
- 11 T implementing linked lists: single, double; stacks, queues
- 12 W binary search trees
- 13 R red-black trees
- 14 F deletion in red-black, augmenting data structures
  
- 15 M 2-3-4 trees
- 16 T PRELIM
- 17 W B-trees
- 18 R return prelim, prelim solutions
- 19 F suffix trees, string applications
  
- 20 M Huffman trees
- 21 T B+ trees
- 22 W graphs, adjacency matrix, adjacency lists
- 23 R BFS
- 24 F DFS, connected components
  
- 25 M topological sort, strongly connected components
- 26 T single source shortest path
- 27 W running time for SSSP
- 28 R Dijkstra's algorithm
- 29 F course review