CS 557 SYLLABUS Algorithms  Spring 2005

Instructor: Dr. R. J. Greene
class webpage:  
http://www.rivier.edu/faculty/rgreene/web/cs557/cs557.htm  
(YOUR HOMEWORK ASSIGNMENT IS THERE NOW)

please check this page several times a week for updates and information. If I see people are having problems, I may be additional information to help you. If I must miss class for some reason, I will put that here so check it before class on class day.

Text: Introduction to Algorithms by Baaase and Van Gelder
THIRD EDITION!!!!

Course Administration:
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(1) Please do all assigned homework whether graded or not.

(2) Please take notes and share notes if someone needs them

(3) When I say THIS IS IMPORTANT - take notes on this! When I say, I AM NOT GOING TO ASK YOU THIS ON A TEST - you might still write it down and think about it nevertheless.

Grading:
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(1) graded assignments (Programs and written homework) - 40%
(2) midterm - 30%
(3) final - 30%

Ideally, we would do everything listed below in the order listed and for the amount of time listed. However, I would much rather have you really understand what we have covered and be able to apply it easily in the real world. So we will go at your pace, not mine.

Topics
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2. Week 3: Sorting (Chapter 4): Algorithms (Heapsort, quicksort, mergesort, radixsort). Proof that sorting (by comparisons) takes O(n log(n)) time. Medians and order statistics.

3. Week 4: Divide and conquer techniques (Chapters 4 and 5):
   For mergesort. For quicksort.

4. Weeks 5 and 6: Dynamic Sets (Chapter 6):
Amortization techniques

5. Week 7: Dynamic programming (Chapter 10) and Midterm Exam: Examples and principles.

6. Week 8: Greedy algorithms (Chapter 8); Huffman codes. Minimal spanning tree.

7. Weeks 9 and 10: Graph algorithms (Chapters 7): Graph representations. Graph traversals. Spanning trees or forests. Shortest paths. Maximum flow.


10. Weeks 14 and 15: Miscellaneous topics and review