

Syllabus

Professor

John R. Hubbard
Office: 201 Jepson Hall.
Hours: 2:00-3:00 on Mondays, Tuesdays, and Thursdays; other times by appointment.
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Textbook

Algorithms by Sanjoy Dasgupta, Christos Papadimitriou, and U. Vazirani. McGraw-Hill, 2008, 0-07-362340-2.

Supplementary Reading

Introduction to Algorithms by T. H. Cormen, C. Leiserson, and R. Rivest, McGraw-Hill, 1990, 0-262-53091-0.
Data Structures with Java, Second Edition by John R. Hubbard, McGraw-Hill, 2007, 0-07-147698-9.

Schedule

13 Ch. 0: Introduction	15 Ch. 0: Complexity Classes
20 Ch. 1: Arithmetic Algorithms	22 Ch. 1: RSA Encryption
27 Ch. 2: Divide-and-Conquer Algorithms	29 Ch. 2: Recurrence Relations
3 Ch. 2: FFT	5 Ch. 2: FFT
10 Ch. 3: Graph Algorithms	12 Ch. 3: DFS Algorithms
17 Ch. 3: Connected Components	19 Review
24 Midterm Test	26 Ch. 4: BFS Algorithms
3 Ch. 4: Dijkstra's Algorithm	5 Ch. 4: Shortest Paths in DAGs
10	12
17 Ch. 5: Greedy Algorithms	19 Ch. 5: Huffman Encoding
24 Ch. 6: Dynamic Programming	26 Ch. 6: Knapsack Algorithms
31 Ch. 6: Shortest Path Algorithms	2 Ch. 7: Linear Programming
7 Ch. 7: The Simplex Algorithm	9 Ch. 7: Network Flows
14 Ch. 8: NP-Completeness	16 Ch. 8: NP-Completeness
21 Review	23 Review
Final Examination: Tuesday April 28 9:00 am	

Homework

You may submit your homework either on paper or as a Dyknow notebook. Paper must be submitted in class on Tuesdays; DyKnow notebooks are due at midnight. You may collaborate with another student on these assignments, provided that you contribute equally. In that case, submit one "paper" for the two of you.

Projects

Programming projects will be assigned regularly. The solutions to each project will be posted on Netfiles after its due date. No project will be accepted after its solution has been posted. You are bound by the Richmond Honor Code to consult no one except this professor on your projects.

Grades

Grades will be posted online at our Blackboard course website. Final grades will be computed by this formula:

Homework	15 %
Projects	15 %
Midterm Test	30 %
Final Examination	40 %

Academic Integrity

The Richmond Honor Council has this written policy:

All academic work, written or otherwise, submitted by a student to fulfill a course requirement is expected to be the result of the student's own thought, research, or self-expression. A student will have committed plagiarism if the student has reproduced someone else's work without acknowledging its source. Plagiarism is no more and no less a violation of the Honor Code than lying, cheating, or academic theft.

This professor regards this Honor Code as essential to the academic integrity of the university.