

SYLLABUS

Computer Science 222, Fall, 2001

Instructor: James A. Davis 206 Jepson Hall 289-8094 jdavis@richmond.edu http://www.mathcs.urich.edu/ jad	Office hours: MW 9:15–10:15; TR 10-11 or by appointment
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I. COURSE DESCRIPTION:

The catalogue description is as follows: *Discrete Structures for Computing. Sets, functions, elementary propositional and predicate logic, Boolean algebra, elementary graph theory, matrices, recurrence relations, proof techniques (including mathematical induction and proof by contradiction), combinatorics, probability, and random numbers, with applications to computer science. Corequisite: Computer Science 221.* This course provides mathematical structure to aid understanding in future computer science courses. It deals with finite mathematical structures, which can be quite different than infinite structures. We will start the course with mathematical grammar lessons: how do we form coherent propositions and how do we analyze them using rules of logic. This leads into a discussion of how we know whether two mathematical ideas are “equivalent”. We then use counting techniques to get a measure of how good a particular algorithm is. Next we describe recurrence relations, a technique that relates the n th element of a sequence to its predecessors. Finally, we study graphs and trees as a way to model computer systems and networks.

The book for this course is Discrete Mathematics by Richard Johnsonbaugh (fifth edition). We will cover most of the first seven chapters.

II. <u>GRADING:</u>	Three hour exams (100 pts each)	300 pts
	Exam dates: 9/20 10/23 11/20	
	<u>Projects</u> (25 pts each)	100 pts
	There will be 4 programming projects during the semester.	
	<u>Homework grade</u>	100 pts
	You will turn in weekly homework assignments	
	<u>Final Exam</u> (Friday December 14, 9-12)	<u>200 pts</u>
	TOTAL	<u>700 pts</u>

(NOTE: You can get 10 bonus points for attending a lecture sponsored by the math and computer science department)

III. ATTENDANCE: Attendance is expected. You are responsible for making up any work you miss if you are not in class. I reserve the right to punish serious abuse of privileges (I will warn you before I do so).

IV. ACADEMIC HONESTY: All work on tests and quizzes must be your own. Calculators are permitted on quiz and test days, but you are never permitted to share them (make sure that you bring one on quiz and test days!). The following 2 statements explain the position of the University on computer plagiarism, and they should be used as a guide to your computer work.

- a. Any original work stored on a floppy disk or other data storage device is the property of the author; anyone else who presents all or part of such work as his or her own, with or without the permission of the author, shall be deemed guilty of plagiarism.
- b. Anyone who gains unauthorized access to computer files stored by someone else shall be guilty of vandalism, whether or not the files are altered.

On the other hand, I want to encourage you to speak with fellow students, lab assistants, or professors about the lab assignments. The important principle to keep in mind is that any solutions that you turn in must have been written by you.