

Math 2300
MWF 10:30–11:20
BUSN 321

DISCRETE MATH
Syllabus

Spring 2006

Instructor: **Dr. Art Duval**

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<http://www.math.utep.edu/Faculty/duval/home.html>

Office hours: **Mon, 2–3, Wed, 9–10; Tue, Thu 10–11.** Please feel free to come by my office any time during scheduled office hours. You are welcome to come at other times, but in that case you might want to make an appointment, just to make sure that I will be there then. You can make an appointment simply by talking to me before or after class, by calling me at my office or at home, or by sending e-mail.

You may also ask any questions directly via phone or e-mail. If I'm not in when you call, please leave a message on the voice-mail or answering machine with your name, number, and a good time for me to call you back. I will try to repond to your phone or e-mail message as soon as possible.

Website: <http://www.math.utep.edu/Faculty/duval/class/2300/061/home.html>

Here you will find this syllabus with relevant links, including homework and reading assignments for the whole semester, as they are announced. Other resources may become available.

COURSE OBJECTIVES: Upon successful completion of the course, you will know and be able to use the basic algebra of sets and of logic. You will be able to identify and use common classes of relations. You will know basic properties of arbitrary functions. You will be able to solve counting problems involving combinations and permutations, including counting problems with restrictions. You will know the basic definitions and theorems of graph theory, and be able to apply them to specific graphs. You will know the basic algorithms for traversing trees, and be able to apply them to specific trees.

Note that this class will probably be quite different from other math classes you have taken, in at least two important ways. First, in contrast to calculus and related courses, the objects under consideration are (as the course title suggests) discrete, not continuous. This has the advantage that you can often explicitly list all the pieces (try listing all the function values of a continuous function!), but the disadvantage of not having continuity to “tie” things together nicely. Second, although there is still a lot of problem-solving, the problems and their answers have a very different flavor: the problems are not equations to be solved, and the answers often aren't even numbers. We also may spend more time explaining why a particular solution works than in finding the solution.

Textbook: *Discrete Mathematics*, 5th ed., *Dossey, et. al.*, **Chs. 2, 4, 5, 8, Appendix A.** We will skip some sections, as announced in class. The textbook is required at all class meetings.

Required Reading: Read each section that we cover in class, both before and after class. Skim the section before class, even if you don't understand it fully, to have some idea of what we'll be doing in class. Read it more carefully after class to clarify and fill in details you missed in class.

Warning: Sometimes, we will not “cover” all the material from a section in class, but instead focus on a particular aspect of the section. In such cases, I will point out in class (and on the course's website) which other parts of the section I expect you to read on your own.

GRADES:

Homework (15%) Individual homework will be assigned regularly, and due approximately weekly.

You are allowed to work together on homework (in fact, I encourage you to do so), but the paper you turn in you must write yourself. Homework is due at the *beginning* of class (10:30 sharp); if you cannot make it to class, arrange to either deliver the homework to me early, or have someone else bring it to class for you. Your lowest homework score will be dropped.

Exams (15% each) There will be three in-class exams on the following days:

Ch. 2	Fri. 17 Feb.
Ch. 8	Fri. 10 Mar.
Chs. 4,5	Fri. 28 Apr.

Makeup exams can be given only in extraordinary and unavoidable circumstances, and with advance notice. (See also “Exception” below.)

Final (40%) comprehensive (including Appendix A)

Fri. 12 May, 10:00 a.m.–12:45 p.m.

Exception Your final exam score will be used in place of your lowest in-class test score, if this increases your overall class average. In particular, if you miss a test, your final exam score will replace it.

Attendance policy: I strongly encourage you to attend every class, though there is no particular grade penalty for absences. My goal is for class meetings and activities to complement, rather than echo, the textbook, and thus for every class to be worth attending.

Drop date: The deadline for student-initiated drops with a W is Fri., 24 Mar. After this date, you can only drop with the Dean’s approval, which is granted only under extenuating circumstances.

I hope everyone will complete the course successfully, but if you are having doubts about your progress, I will be happy to discuss your standing in the course to help you decide whether or not to drop. You are only allowed three enrollments in this course, so please exercise the drop option judiciously.