

Math 4326
TuTh 1:30–2:50
COMP 322

LINEAR ALGEBRA
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/4326/061/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 be able to prove (and occasionally discover) theorems in linear algebra, at the level of abstraction of linear transformations and vector spaces. You will know, understand, and be able to apply, prove, and explain major results in this area. You will be better able to independently read advanced mathematics.

Note: In contrast to Matrix Algebra (Math 3323), we will be focusing on proofs and theory instead of applications (though theory lies closer to applications in linear algebra than it does in, say, analysis), vector spaces instead of \mathbb{R}^n , and linear transformations instead of matrices. Otherwise, many topics will look familiar.

Textbook: **Linear Algebra Done Right, 2nd ed., Sheldon Axler, Chs. 1–8**. We will generally spend one class period per “section” (see Table of Contents), though parts of Chs. 1, 2, and 4 should be review, and we will go a little faster through these.

You will spend a substantial amount of time outside of class reading the textbook. The course will be structured to encourage and support you in this endeavor. In-class activities will center around our making use of what you have read outside of class.

GRADES:

Homework and Participation: For each section of material we encounter, there will be three kinds of homework, as follows (more details are on a separate handout):

Advance preparation (20%) You will read the section carefully, write responses to reading questions, create some of your own questions, and reflect. The written part of this assignment will be due the class period *before* we discuss the material in class.

Warmup exercises (10%) On the *day of* our class discussion over the material, we will discuss easier warmup exercises. You will prepare your answers, in writing, before class, and the class will share answers in small groups or whole class discussions.

I expect everyone to attend and participate actively in class, in particular to speak up during class discussion with questions and ideas, and to work well with others. Your active participation in class will constitute a substantial part of this part of your grade for the course.

Main exercises (30%) *After* our class discussion over the material, you will turn in clearly-written solutions to harder homework problems. These will generally be due weekly. *Graduate students* taking this class will be assigned additional main exercises, in accordance with university policy.

Written assignments (for all three kinds of homework) will not be accepted after they are due, except in extenuating circumstances that you explain to me as soon as possible. Incomplete homeworks will be accepted, though, so please turn in whatever work you have completed when homework is due. You are encouraged to work together on your homework, but you must write up your solutions by yourself.

Exams:

Midterm (15%) The midterm will cover all material we have discussed to that point, and will be on

Thu., 9 Mar.

Final (25%) The final exam will be comprehensive over all material we discuss in class. The final will be on

Thu., 11 May, 4:00–6:45 p.m.

Makeup exams can be given only in extraordinary and unavoidable circumstances, and with advance notice.

Attendance policy: Due to the course structure, attendance is mandatory. There is no particular penalty for missing a particular class, but you cannot get a good participation grade if you miss too many classes. I will usually “excuse” an absence if you tell me about it in advance, or, in cases of emergencies, as soon as possible afterwards.

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.