

Text We will be using *Introduction to Linear Algebra* by Lee W. Johnson, R. Dean Riess, Jimmy T. Arnold (Fourth Edition). We will cover material from Chapters 1 through 4 — see the attached **tentative** schedule for the exact sections covered. The Bookstore may have two recommended texts — I **highly** recommend the first one: *The Nuts and Bolts of Proofs* by Antonella Cupillari, *Thinking Mathematically* by John Mason.

Home Page Start at <http://buzzard.ups.edu/courses.html> to locate the WWW page for this course.

Office Hours My office is Thompson 321G; the telephone number is 879-3564. Making appointments or simple, non-mathematical questions can be handled via electronic mail — my address is beezer@ups.edu. Office hours will be 9:30–10:30 on Monday, Tuesday, Thursday and Friday. I will always be available during these times on a first-come, first-served basis. If these times are not convenient, please do not hesitate to make an appointment with me for another time. You are also welcome to drop by my office without an appointment at any time that I am in (2 P.M. – 4 P.M. is a good time to try). We will have group office hours for this course on Wednesdays, 11:00 A.M. – 1:00 P.M. Office hours are your opportunity to receive extra help or clarification on material from class, or to discuss any other aspect of the course.

Calculators This course requires the use of a calculator. It should be capable of doing matrix operations — specifically “reduced row echelon form,” “determinants” and “eigenvalues and eigenvectors.” I highly recommend the Texas Instruments TI-86, which is what I will be using, since this is the model currently used in our calculus courses. These are available at the bookstore, though you must ask for them at the checkout counter. It is not required that you use this exact model, but whatever you use should have the capabilities listed above. If you no longer have a manual for the TI-86, check the course WWW page for a link to an electronic version (you will especially want Chapter 13, and possibly Chapter 12).

Reading Questions will be posted on the course WWW page about each day’s reading, and you will email me your answers in advance of class. Please consult that page for more on the specifics of submitting these questions.

Homework Suggested exercises will be posted on the course WWW page as they are determined. It is expected that you will work these problems, but they will not be collected. Of course, you are not limited to working *just* these problems. These exercises will form the basis for the classes where we will have problem sessions and for discussions in office hours (group or otherwise). It is your responsibility to be certain that you are learning from these exercises. The best ways to do this are to work the problems diligently when assigned and to participate in the classroom discussions. If you are unsure about a problem, then a visit to my office is in order. Making a consistent effort outside of the classroom is the easiest way to do well in this course.

Mathematics not only demands straight thinking, it grants the student the satisfaction of knowing when he [or she] is thinking straight. — D. Jackson

Mathematics is not a spectator sport. — Anonymous

I hear, I forget.

I see, I remember.

I do, I understand.

— Chinese Proverb

Quizzes There will be seven one-hour quizzes — they are all included on the *tentative* schedule. The lowest of your seven quiz scores will be dropped. The comprehensive final exam will be given at 4 P.M. on Tuesday, May 8. The final exam cannot be given at any other time, so be certain that you do not make any travel plans that conflict, and also be aware that I will allow you to work longer on the final exam than just the two-hour scheduled block of time.

Writing This course has been designated as part of the University's Writing in the Major requirement. Thus, there will be an emphasis on the quality of the mathematical exposition in your written work, and there will be two assignments that will be primarily graded on the basis of the exposition. These assignments will not be accepted late.

Grades Grades will be based on the following breakdown: Quizzes — 60%; Writing — 15%; Final — 25%. Reading questions, attendance and improvement will be considered for borderline grades. Scores will be posted on the World Wide Web at <http://buzzard.ups.edu/courses.html>. A reminder about withdrawals — a Withdrawal Passing grade (W) can only be given during the third or fourth weeks of the semester, after that time (barring unusual circumstances), the appropriate grade is a Withdrawal Failing (WF), *even if your work has been of passing quality*. See the attached schedule for the last day to drop with an automatic 'W' and please read *The Logger* about these often misunderstood grades.

Attendance Daily attendance is required, expected and a pretty good idea.

Purpose This course is much different from most any mathematics course you have had recently, in particular it is much different than calculus courses. We will begin with a simple idea — a linear function — and build up an impressive, beautiful, abstract theory. We will begin computationally, but quickly shift to concentrating on theorems and their proofs. By the end of the course you will be at ease reading and understanding complicated proofs. You will also be very good at writing routine proofs and will have begun the process of learning how to create complicated proofs yourself.

You will see this material applied in subsequent courses in mathematics, computer science, chemistry, physics, economics and other disciplines (though we will not have much time for applications this semester). You will gain a “mathematical maturity” that will be helpful as you pursue upper-division coursework. It is not easy material, but your attention and hard work will be amply repaid with an in-depth knowledge of some very interesting ideas.

Tentative Daily Schedule

Monday	Tuesday	Thursday	Friday
Jan 15 MLK Day	Jan 16 Section 1.1	Jan 18 Section 1.2	Jan 19 Section 1.3
Jan 22 Section 1.5	Jan 23 Section 1.6	Jan 25 Problem Session	Jan 26 Quiz #1
Jan 29 Section 1.7	Jan 30 Section 1.7	Feb 1 Section 1.9	Feb 2 Section 1.9
Feb 5 Problem Session	Feb 6 Quiz #2	Feb 8 Section 2.1/2.2	Feb 9 Section 2.2
Feb 12 Section 2.3 Last day to drop	Feb 13 Section 2.3	Feb 15 Section 2.4	Feb 16 Problem Session
Feb 19 Quiz #3	Feb 20 Writing Discussion	Feb 22 Section 2.5	Feb 23 Section 2.5
Feb 26 Section 2.6	Feb 27 Section 2.7	Mar 1 Section 2.7	Mar 2 Problem Session
Mar 5 Quiz #4	Mar 6 Section 3.2	Mar 8 Section 3.1	Mar 9 Section 3.4 Writing #1 Due

Spring Break

Monday	Tuesday	Thursday	Friday
Mar 19 Section 3.5	Mar 20 Section 3.6	Mar 22 Section 3.7	Mar 23 Section 3.7
Mar 26 Problem Session	Mar 27 Quiz #5	Mar 29 Writing Discussion	Mar 30 Section 4.1/4.2
Apr 2 Section 4.2	Apr 3 Section 4.3	Apr 5 Section 4.3	Apr 6 Section 4.4
Apr 9 Section 4.4	Apr 10 Section 4.5	Apr 12 Problem Session	Apr 13 Quiz #6
Apr 16 Section 4.7	Apr 17 Section 4.7	Apr 19 Section 4.8	Apr 20 Section 4.9
Apr 23 Section 4.9 Writing #2 Due	Apr 24 Section 4.10	Apr 26 Section 4.10	Apr 27 Problem Session
Apr 30 Quiz #7	May 1 Housekeeping		

Final Examination
Tuesday, May 8 at 4 P.M.