Time and Place: 12–1 in SW 102 (MWF).
Instructor: Dr. David Blecher, 622 PGH, email: dblecher@math.uh.edu
Office Hours: 1-2 pm MWF (this may change), or email me
Office phone number: 713-743-3451.
TA’s details: Justin Schoneman, 677 PGH, email jscho@math.uh.edu.
TA’s office hours: CASA MW 12-2, and in 677 PGH 4-5pm MW.
Course website: http://www.math.uh.edu/~dblecher/2331.html
Departmental syllabus:
http://www.mathematics.uh.edu/undergraduate/courses/math2331/index.php
Text: Introduction to Linear Algebra, 4th Edition by Gilbert Strang (see my website for streaming lecture download information)
Last date to drop with refund or not having it count towards the ‘allowed drops’/enrollment cap: February 1.
Last date to drop with W: April 3.
Final exam: 11-2 Monday May 7.

Modifying a description by the textbooks author, the goals of this course are “using matrices and understanding them. Here are key computations and some of the ideas behind them:

0. Working with vectors and matrices (their algebra and geometry).
1. Writing a system of linear equations as Ax = b. Solving Ax = b for square systems by elimination (pivots, multipliers, back substitution, invertibility of A, factorization into A = LU)
2. How to find the complete solution to a system of linear equations if there is a solution (column space containing b, rank of A, nullspace of A and special solutions to Ax = 0 from row reduced R)
3. Basis and dimension (bases for the four fundamental subspaces)
4. (Optional) Least squares solutions (closest line by understanding projections)
5. Orthogonalization by Gram-Schmidt (factorization into A = QR)
6. Properties of determinants (leading to the cofactor formula and the sum over all n! permutations, applications to inv(A) and volume)
7. Eigenvalues and eigenvectors (finding these for a square matrix A, diagonalizing A, computing powers of A)
8. Symmetric matrices and positive definite matrices (real eigenvalues and orthogonal eigenvectors, tests for positive definiteness, applications)
9. Linear transformations and change of basis

The emphasis is on working examples. Study the lectures carefully, the tests and exam will be based on these, and on the homework. It is important to keep up to date. There will be frequent online quizzes administered through CASA, the due dates are accessible from a link on the course website. Homework will be due in class on the due date posted on the course website. You should attempt as many homework problems as possible. They will be collected but only partially graded. It is your responsibility to go carefully through the homework keys and see how the problems should have been done, since these (or ones very similar) may show up on the test. You are encouraged to work with others, form study groups, and so on, however copied turned in homework will not help you assimilate the
material, and will not be graded. Please bring your student ID, but no calculators, to tests and exams.

Bring comments or complaints to my attention as soon as possible. Don’t wait until the end of the semester to bring up a matter which we could deal with and solve early on. Remember that math is always easy when you look back on it, AFTER you have spent the time wrestling with the new concepts and doing plenty of exercises. No pain, no gain. The recipe for success: 1) Read classnotes carefully as described above (every line), and ask about what you don’t understand, 2) Do as many problems as possible, 3) Clear up confusions (ask for help if you are lost, we want to help you get found!), 4) Learn from your mistakes - for example, check carefully through your graded work, 5) Give sufficient time to study (particularly for tests).

Course grade is approximately based on a total score of 625 points consisting of homework (75 points), quizzes (50 points), three semester tests (100 points each), and a final exam (200 points). The instructor may change this at his discretion.