Fall 2009 Math 2853 Section 1: Elementary Linear Algebra

Instructor: Dr. Minh Nguyen
Office: Boyd 319
Phone: 678-839-4130; Fax: 678-839-6490
Email: vnguyen@westga.edu
Office Hours: TBA; or by appointment

Hours Credit: 3 hours
Prerequisites: MATH 1634 with a grade of C or higher
Textbook: Introductory Linear Algebra: An Applied First Course (8th ed.), by B. Koleman and D. Hill. We will cover Chapters 1-4, 6-8.

Description: Matrices (properties of matrices, matrix algebra and operations, determinants, inverse of a matrix eigenvalues and eigenvectors), methods of solving systems of linear equations (Gaussian elimination, Gauss-Jordan elimination, Cramer's Rule), vectors (linear independence, span, basis and dimension), applications (coding, computer graphics, electrical circuits).

Computer labs: Will take place in the classroom with Maple 11 or higher.

Learning Outcomes: The student will have an understanding of:
1. How to perform basic matrix operations.
2. How to compute the inverse or determinant of a square matrix.
3. How to express linear systems of equations in matrix form.
4. How to solve systems of linear equations using Gaussian elimination and Gauss-Jordan elimination.
5. How to solve systems of linear equations using Cramer's Rule.
6. The basic properties of real vector spaces and subspaces including properties such as linear independence, span, basis, rank.
7. How to analyze linear transformations.
8. How to compute eigenvalues and eigenvectors of a square matrix.
9. How to diagonalize a square matrix.
10. Use MAPLE version 11 to perform basic matrix operations and solve linear systems.

Grading Procedure:

Tests (300 points): There will be three 50-minute tests, each worth 100 points.
Quizzes (100 points): There will be approximately 14 short quizzes. The best 10 quizzes will count. Each quiz is worth 10 points.
Final Exam (200 points): There will be a comprehensive final exam, worth 200 points.
Extra Credits: are given to those students who actively participate in discussion and in solving problems.
For your grade in the course, the following grading scale will be used:

- 540-600 points earns a grade of A
- 480-539 points earns a grade of B
- 420-479 points earns a grade of C
- 360-419 points earns a grade of D
- below 360 points earns a grade of F

**Test and Quiz Policy:** No make-up tests or quizzes will be given. Missed quizzes and tests get a grade of 0.

**Homework:** Homework will be assigned during each class meeting or on the web page of this course. It is to be completed by the next class meeting. It is ESSENTIAL to your success in the course that you do the homework regularly, and on time. Part of each homework assignment is to read the corresponding material in the text.

**Online technology support:** We will use CourseDen online service to support the course. You can find this web site at [http://webct.westga.edu](http://webct.westga.edu) Quizzes, lecture notes, your grades and other assignments may be posted at this site. Visit this site as often as possible to know what is going on in this class.

**Attendance Policy:** Students are expected to attend every class. If a class is missed, the student is responsible for all material, assignments and announcements.

**Attendance:** 8 absences lead to WF.

**Important Dates:**
- **Test #1:** Sept. 18
- **Test #2:** Oct. 16
- **Test #3:** Nov. 20