MATH 526, Numerical Linear Algebra, Fall 2014

Meeting Information:

- Classroom Location: LC 113
- Days and Times: TTH 1:15PM–2:30PM

Information
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Office Location: LC 423
Office Hours: T 9:30am -10:30am, TH 2:30PM-4:00PM and or by appointment

Textbook:

Course webpage
type “www.math.sc.edu/~xfyang”, click on Teaching.

Prerequisites:
MATH 241.

Estimated Schedule (Subject to Change)

- chapter 1 Introduction to Vectors: 2 lectures
- Chapter 2 Solving Linear Equations: 5-6 lectures
- Chapter 3 Vector Spaces and Subspaces: 5-6 lectures
- Chapter 4 Orthogonality: 4-5 lectures
- Chapter 5 Determinants: 3-4 lectures
- Chapter 6 Eigenvalues and Eigenvectors: 6-7 lectures

Homework and Quizzes
Homework will be assigned weekly (usually Thursday or Friday), on the course webpage, but will not be collected. But you are supposed to do them all. REMEMBER: the more problems you do, the better you understand the material. Students are encouraged to work together on homework sets. There will be approximately one quiz per week in Thursday’s class, and no quiz during the exam weeks. There are 1-3 short questions in one quiz and around 15-20 minutes (subject to change with the difficulty). Two lowest quiz grades will be dropped from the final grade calculation. Notice: Quiz questions will be chosen from homeworks. It is expected that each student in this class conduct himself/herself within
the guidelines of the Honor System. All academic work should be done with the level of honesty and integrity that this University demands. Letter grades will be assigned based on the following numerical scales: $[90,100]$ A, $[86, 89]$ B+, $[80, 85]$ B, $[76, 79]$ C+, $[70, 75]$ C, $[66, 69]$ D+, $[60, 65]$ D, $[0, 59]$ F. (The dates are to be determined.)

**Exams**

There will be two midterm exams and a comprehensive final exam. The exams are “closed book” with no books, no notes, no graphing calculators, no labtop comptuer or equivalent technology, etc. You may use the scientific calculator. Picture I.D. is required and must be presented upon request. There are no early exams. A late exam is only possible for a written legitimate documented reason. Note that student athletes, participating in a USC athletic event and with appropriate documentation, are exempt from this rule. You must take your exams with the lecture for which you are registered.

**Attendance and Academic Honesty**

Attendance at every class meeting is important and expected. By statistics, students may miss up to 10% of the class meetings (around 4 times) can have their grades lowered. Anyone caught cheating or turning in work that is not their own will be dealt with according to University policies. **Bonus points policy:** If your attendance is more than 80%, you will get 3 bonus points for final grade; 60% − 80%, 2 bonus points; 30% − 60%, 0 bonus points; less than 30%, -2 bonus points.

**Grades**

- Quiz (15%)
- Lab (20%)
- Exam 1 (15%)
- Exam 2 (15%)
- Final (35%)

**Learning Outcome**

Students will master concepts and solve problems based upon matrix algebra, Gauss elimination, iterative methods, overdetermined systems and least squares, eigenvalues and eigenvectors, and numerical implementation.