**Instructor:** Xiaofei Hu

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Office hours: 10:00-11:00am Wednesday and 1:00-2:00pm Friday

**Prerequisites and Course Motivation**

Elementary calculus. Beginning knowledge of linear algebra. Matlab will be used for the computer projects. Prior experiences in using Matlab or in computer programming are not prerequisites. Practical applications of numerical linear algebra will be emphasized.

**Course Text**

L. Trefethen and D. Bau, Numerical Linear Algebra, SIAM Press, latest edition

**Topics Include**

(1) fundamentals of elementary linear algebra and Matlab, (2) singular values, (3) least squares problems and applications, (4) floating point arithmetic, (5) numerical conditioning and stability, (6) systems of equations and applications , (7) eigenvalues and applications, and (8) iterative methods and applications (topic coverage may slight vary due to time constrain.)

**Problem Sets, Exams & Grading**

There will be 3 problem sets (computer projects +math problems), informal homework, a midterm, and a final exam. Homework effort is used to resolve marginal grade cases. Letter grades (with + or -) are used. Course grades are determined using the following weighting:

Undergraduate:

Projects and Problem Sets - 3 at 10% each

Midterm - 30% (take-home)

Final Exam - 40% (take-home)

Graduate:

Projects and Problem Sets - 3 at 10% each

**Paper Presentation – 10%**

Midterm - 30% (take-home)

Final Exam - 30% (take-home)

**Comments:**

Note that the University requires that courses involving both graduate and undergraduate students have some way to differentiate between the two. In this course that will be accomplished by having the graduate students provide a more detailed classroom presentation.

If you have a disability that may require an accommodation for taking this course, then please contact the Learning Assistance Center (758-5929) within the first two weeks of the semester.