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GMU Department of Mathematical Sciences  
Math 625: Numerical Linear Algebra, Spring 2019  
Lectures: MW 4:30 pm - 5:45 pm Peterson Hall, room 2413

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**Instructor:** Prof. Maria Emelianenko

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**Office:** EXPL 4454

**Office Hours:** MW 11:30am-12:30pm and by appt

**Description:**

This course focuses on theory and development of numerical algorithms for solving a variety of matrix problems: linear systems, least squares problems, eigenvalue problems, and singular value decomposition. Direct and iterative method, analysis of sensitivity to rounding errors, and applications of these methods will be discussed.

**Main text:** James W. Demmel, “Applied Numerical Linear Algebra”, SIAM 1997

**Supplementary reading:** Trefethen, Bau, “Numerical Linear Algebra”, SIAM 1997

**Website:** Codes and lecture notes will be posted on Piazza: [piazza.com/gmu/spring2019/math625](https://piazza.com/gmu/spring2019/math625). Blackboard site will be used for collecting assignments and posting grades.

**Grades:** Grades will be assigned according to the percent system given below:

60% homework assignments/projects

25% final project - take-home, during finals week

15% participation

Homework assignments will contain analytical and computational questions from the textbook as well as other exercises. Although discussion among students is encouraged, all submitted assignments should show independent work unless otherwise specified.

**Academic Policies**

All GMU policies regarding ethics and honorable behavior apply to this course. If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703/993-2474. All academic accommodations must be arranged through that office.