Introduction to Linear Algebra: MA 260 − 2B
Spring 2022

Class meets: Tuesday and Thursday 9:30 pm-10:45 am, HHB 221.
Instructor: Dr. Julia Karpeshina.
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Office hours: Monday and Wednesday 5.00 pm - 6.00 pm on Zoom or by appointment in person or on Zoom .
Textbook: Howard Anton , Chriss Rorres "Elementary Linear Algebra" 12th edition. Sections: 1.1-1.8, 2.1-2.3, 3.1-3.3, 4.1-4.6, 5.1-5.2, 7.1-7.2.
Course Content:
• Linear Equations: Gaussian Elimination;
• Matrices: Matrix Operations and Properties, Invertible Matrices and Inverses;
• Determinants: Cofactor Expansion, Row Reduction, Cramers Rule;
• Euclidean Vector Spaces: Vectors, Norm, Dot Product and Distance, Orthogonality;
• General Vector Space: Real Vector Spaces, Subspaces, Linear Independence, Basis, Dimension;
• Eigenvalues and Eigenvectors;
• Diagonalization: Symmetric Matrices, Orthogonal Diagonalization;
• Selected Additional Topics: Singular Value Decomposition and Applications in Image Analysis, Graph Theory, Biology.

Grading policy: There will be two Midterm Tests and the Final Exam. Each of them will be evaluated between 0% and 100%. The final grade is calculated as follows:

$$Test\ 1 : 25\%, \quad Test\ 2 : 25\%,, \quad Final\ Exam : \ 50\%;$$

$$A\ \geq 91\%, \quad B\ \geq 81\%,$$

$$C \geq 71\%, \quad D \geq 61\%.$$

There will be an extra credit for homework added to the test grades. Each returned HW assignment gives 0%– 2% (depending on the number of problems solved) added to your next test grade. There will be **no** make-up tests.

There is **no** extra credit for the **late** homework.

   Regular class attendance is important and strongly encouraged. The instructor will follow the lecture notes (but occasionally include different examples), so if you have to miss a class, study the notes thoroughly. Unannounced extra-credit quizzes will be offered. Extra-credit points will be occasionally given for active class participation.

Homework: Problems will be assigned weekly. All HW's are due the next Tuesday, after assignment.

Here are the **tentative** dates for the tests:

Test 1: March 3;

Test 2: April 19;

The exact date will be announced two weeks before a test.

Final Exam April 28, Thursday, 8:00 AM – 10:30 AM.

   Welcome to MA 260 and best of luck to you all.