MA 26500 - Linear Algebra

Credit Hours: 3

Contact Hours: 3 hrs/week

Course Administration: Department of Mathematics

Instructional Materials:

- Pearson MyLabMath platform (https://www.pearson.com/en-us.html)
- Optional: "Linear Algebra and Its Applications", 6th Edition, by David C. Lay, Steven R. Lay and Judi J. McDonald, Pearson, ISBN: 978-1292351216.

Course Description: Introduction to linear algebra. Systems of linear equations, matrix algebra, vector spaces, determinants, eigenvalues and eigenvectors, diagonalization of matrices, applications. Not open to students with credit in MA 26200, 27200, 35000 or 35100.

Prerequisites/Corequisites: MA 16200 (Minimum grade of C-) or MA 16600 (Minimum grade of C-)

Learning Outcomes:

- Learn the basic properties of matrices.
- Learn how to solve systems of linear equations.
- Learn the basic properties of determinants.
- Learn about linear independence, spanning sets and bases in the context of vector spaces.
- Learn the theory of inner product spaces and how it applies to least-squares approximations.
- Learn the theory of eigenvalues and eigenvectors and how it applies to systems of differential equations.

Topics:

- Systems of Linear Equations
- Matrix Algebra
- Vector Spaces
- Determinants
- Eigenvalues and Eigenvectors

- Diagonalization of Matrices
- Real-World Applications