

Marshall University

College of Science

Mathematics Department

MTH 329: Elementary Linear Algebra

Course catalog description

Systems of linear equations, matrices and determinants, vector spaces, linear transformations, eigenvalues, eigenvectors, and applications.

Credit hours

3 hours

Prerequisites

ACT Math 27, or a grade of C or higher in MTH132, MTH229, or IST131.

Learner outcomes

- Manipulate vectors, both graphically and algebraically, to be able to apply them to problem solving in various areas, such as: geometry, physics, and engineering.
- Use linear systems to model a wide range of problems, solve such systems by hand, and interpret the implications of various types of solutions.
- Understand the concepts of spanning sets and linear independence, and their connections with familiar ideas.
- Work with matrices to organize data and solve linear systems, using technology to aid in the task, and be able to interpret and apply the results to real-world problems, basis issues, and linear transformations.
- Realize the basic potential numerical problems of working with technology and large matrices, and avoid processes that are unnecessarily inefficient.
- Be able to determine eigenvalues and eigenvectors of matrices, and make connections with other aspects of linear algebra.

- Understand the basic concept of orthogonality in higher dimensions

Suggested textbooks

- Holt, *Linear Algebra with Applications*, ISBN 9780716786672

Last updated

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