Catalog description: A study of vectors, matrices and linear transformations, principally in two and three dimensions, including treatments of systems of linear equations, determinants, and eigenvalues. Prerequisite: MAT 1120 or permission of the instructor.

Course Goals

- Develop algebraic skills
- Develop mathematical reasoning and problem solving
- Develop spatial visualization skills
- Learn about some applications of linear algebra
- An introduction to a computer algebra software system as it applies to linear algebra

Mapping of the Topics in the Catalog Description to the Text

Systems of Linear Equations: 1.1, 1.2, 1.5
Vectors: 1.3, 1.4, 1.7, 6.1
Matrices: earlier +2.1, 2.2, 2.3
Linear transformations 1.8, 1.9 (1-1 and onto eliminated), 2.7
Determinants: 3.1, 3.2, 3.3
Eigenvalues 2.8, 5.1, 5.2, 5.6

1.8, 1.9, 2.7 and 6.1: Rotation counterclockwise by θ

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- Here inner product $\vec{u} \cdot \vec{v} = \vec{u}^T \vec{v}$ induces metric on the space $||\vec{u} - \vec{v}||$ is distance between vectors as in 1.3

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- Note in ASULearn sqrt(1)