





## Examples of Additional Topics

Complex vector spaces

Gram-Schmidt process

Orthogonal Matrices

$LU$  factorization

$QR$  factorization

Markov Chains

Principal Component Analysis

Least Squares Approximation

Distance between points, lines, and planes

Matrix Block Multiplication

Cramer's Rule

Iterative Methods

Singular Value Decomposition

Cayley-Hamilton Theorem

Jordan Canonical Form and Rational Canonical Form

Linear Differential Equations as the kernel of a linear transformation