

# Math 362 – Linear Algebra II

## Spring 2024

**Instructor:** Matthew Bates, matthew.bates1@maine.edu

**When:** MWF 9:00-9:50am

**Pre-requisites:** MAT262, or MAT261, or MAT258, or departmental permission

A rigorous treatment of linear algebra that emphasizes theory and proofs. Topics include abstract vector spaces, linear maps, matrices, determinants, eigenvalues and eigenvectors, inner-product spaces, and Jordan normal form.

*“Mathematics is the art of reducing a problem to linear algebra,  
because that is the only field we truly understand.”*

- My linear algebra professor when I was a student (I forgot their name...)

$$\begin{bmatrix} \cos 90^\circ & \sin 90^\circ \\ -\sin 90^\circ & \cos 90^\circ \end{bmatrix} \begin{bmatrix} a_1 \\ a_2 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$$