

# Linear Algebra

spring, 2010

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# Syllabus

course webpage:

<http://www.minho-kim.com/courses/10sp71007>

# Table of Contents of the Textbook

1. Vectors
2. Systems of Linear Equations
3. Matrices
4. Eigenvalues and Eigenvectors
5. Orthogonality
6. Vector Spaces
7. Distance and Approximation

# Applications (Five “vignettes” in the textbook)

- ▶ The codabar system (p.55)
  - dot product
- ▶ The global positioning system (p.119)
  - system of linear equations
- ▶ Robotics (p.224)
  - linear transformations
- ▶ Ranking sports teams and searching the Internet (p.353)
  - eigenvalues and eigenvectors
- ▶ Digital image compression (p.616)
  - singular value decomposition