

Mathematics 131
Linear Algebra I

Text: "Linear Algebra" by Peter Petersen

A free ebook is available at <http://link.springer.com/book/10.1007/978-1-4614-3612-6/page/1>

A proof-based introduction to vector spaces and matrices.

The book will cover the first chapter of Petersen's book. In the average, we will spend roughly two lectures on each section.

TOPICS

- 1.1 Introduction and Well – Ordering
- 1.2 Elementary Linear Algebra
- 1.3 Fields
- 1.4 Vector Spaces
- 1.5 Bases
- 1.6 Linear Maps
- 1.7 Linear Maps as Matrices
- 1.8 Dimension and Isomorphism
- 1.9 Matrix Representation Revisited
- 1.10 Subspaces
- 1.11 Linear Maps and Subspaces
- 1.12 Linear Independence
- 1.13 Row Reduction
- 1.14 Dual Spaces
- 1.15 Quotient Spaces