

MATHEMATICS 23

INTRODUCTION TO COLLEGE MATHEMATICS

Text: *Elementary Linear Algebra, Fifth Edition*, by E. Larson and B.H. Edwards

This course is designed for students who are not mathematics majors and does not count towards fulfillment of the mathematics major requirement. Topics include matrix operations, linear dependence and independence, ranks and inverses, systems of linear equations, determinants, eigenvalues and eigenvectors with business and economic applications.

TOPICS	SUGGESTED NO. OF 50 MIN. CLASSES
Systems of linear equations.....1 (§§ 1.1-1.3) Gaussian elimination, application to curve fitting.	
Basic matrix algebra.....2 ¹ / ₂ (§§ 2.1-2.5) Matrix operations, matrix inverse, elementary matrices, applications to cryptography and Leontief's economic model.	
General vector spaces.....2 (§§ 4.1-4.4, 5.1-5.2) Vector operations and spaces, subspaces, spanning and linear independence, dot product and length.	
Determinants.....1 ¹ / ₂ (§§ 3.1-3.5) Definition, computation using elementary matrices, basic properties.	
Eigenvalues and eigenvectors.....2 (§§ 7.1-7.2, 7.4) Basic definitions and properties, diagonalization of matrices, applications to population growth.	