



DAVIS UNIVERSITY

COURSE SYLLABUS
MTH316: LINEAR ALGEBRA

COURSE SYLLABUS FOR: MTH316 LINEAR ALGEBRA

CREDIT HOURS: 5 CREDITS

INSTRUCTOR:

INSTRUCTOR EMAIL:

INSTRUCTOR OFFICE HOURS:

COURSE DESCRIPTION: Topics include systems of linear equations, vector spaces and subspaces, bases, linear transformations, determinants, eigenvalues and eigenvectors, diagonalization of matrices, and orthogonality.

PREREQUISITES: Calculus I

TEXT: Linear Algebra and Its Applications, 6th Edition, David C. Lay. ISBN: 9780135851159

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- Copy the original sentence pattern, substitution synonyms for key words.
- Neglect to indicate the source of the original material.

ASSESSMENTS:

<u>Content</u>	<u>Points</u>
Homework	150
Quizzes	200
Exams	400
Final Exam	250
Total	1000

COURSE GRADE:

Letter Grade	Range	GPA
A+	97–100	4.0
A	93-96	4.0
A-	90–92	3.7
B+	87–89	3.3
B	83–86	3.0
B-	80–82	2.7
C+	77–79	2.3
C	73–76	2.0
C-	70–72	1.7
D+	67–69	1.3
D	63–66	1.0
D-	60–62	0.7
F	Below 60	0.0

TENTATIVE COURSE OUTLINE:

Module/Unit	Content Covered	Assignments & Assessment
Module 1:	1.1 Systems of Linear Equations 1.2 Row Reduction and Echelon Forms 1.3 Vector Equations 1.4 The Matrix Equation $Ax = b$ 1.5 Solution Sets of Linear Systems	Homework 1 Quiz 1
Module 2:	1.7 Linear Independence 1.8 Introduction to Linear Transformations 1.9 The Matrix of a Linear Transformation	Homework 2 Quiz 2
Module 3:	2.1 Matrix Operations 2.2 The Inverse of a Matrix 2.3 Characterizations of Invertible Matrices	Homework 3 Quiz 3
Module 4:	2.5 Matrix Factorizations 2.8 Subspaces of R^n 2.9 Dimension and Rank	Homework 4 Quiz 4 Exam 1
Module 5:	3.1 Introduction to Determinants 3.2 Properties of Determinants 3.3 Cramer's Rule, Volume, and Linear Transformations	Homework 5 Quiz 5
Module 6:	4.1 Vector Spaces and Subspaces 4.2 Null Spaces, Column Spaces, and Linear Transformations 4.3 Linearly Independent Sets; Bases 4.4 Coordinates	Homework 6 Quiz 6
Module 7:	4.5 The Dimension of a Vector Space 4.6 Change of Basis 5.1 Eigenvectors and Eigenvalues	Homework 7 Quiz 7

Module 8:	5.2 The Characteristic Equation 5.3 Diagonalization 5.4 Eigenvectors and Linear Transformations 5.5 Complex Eigenvalues	Homework 8 Quiz 8 Exam 2
Module 9:	6.1 Inner Product, Length, and Orthogonality 6.2 Orthogonal Sets 6.3 Orthogonal Projections 6.4 The Gram–Schmidt Process	Homework 9 Quiz 9 Final Exam