

Math 0280 Schedule and Practice Problems

August 27:

Introduction.

1.1. The Geometry and Algebra of Vectors.

1.1 Problems 1--28

August 30:

1.1.(cont.) The Geometry and Algebra of Vectors

1.1 Problems 1--28

September 1:

1.2. Length and Angle. The Dot Product. Projections.

1.2 Problems 1--52.

September 3:

1.2.(cont.) Length and Angle. The Dot Product. Projections.

1.3. Lines and Planes.

1.2 Problems 61--67.

1.3 Problems 1--15.

September 8:

1.3. Lines and Planes.

1.3 Problems 18--30, 35--38.

September 10:

2.1. Introduction to Systems of Linear Equations.

2.1 Problems 1--38.

September 13:

2.2. Direct Methods for Solving Linear Systems.

2.2 Problems 1--18.

September 15:

2.2.(cont.) Direct Methods for Solving Linear Systems.

2.2 Problems 23--46.

September 17:

2.3. Spanning Sets and Linear Independence.

2.3 Problems 1--42.

September 20:

2.3.(cont.) Spanning Sets and Linear Independence.

2.3 Problems 1--42.

September 22:

2.3.(cont.) Spanning Sets and Linear Independence.

2.3 Problems 1--42.

September 24:

Chapters 1 and 2 Review. Applications.

September 27:

3.1. Matrix Operations.

3.1 Problems 1--22, 31--36

September 29:

3.2. Matrix Algebra.

3.2 Problems 1--28.

October 1:

3.3. The Inverse of a Matrix. Elementary Matrices. The Fundamental Theorem of Invertible Matrices.

3.3 Problems 1--23.

October 4:

3.3. (cont.) The Inverse of a Matrix. Elementary Matrices. The Fundamental Theorem of Invertible Matrices.

3.3 Problems 24--40.

October 6:

3.3.(cont.) The Inverse of a Matrix. Elementary Matrices. The Fundamental Theorem of Invertible Matrices.

3.3 Problems 48--59.

October 8:

Review.

October 11:

Midterm Exam 1

October 13:

3.5. Subspaces, Basis, Dimension, Rank. Coordinates.
3.5 Problems 1--48, 51, 52.

October 18:

3.5.(cont.) Subspaces, Basis, Dimension, Rank. Coordinates.
3.5 Problems 1--48, 51, 52.

October 20:

3.5.(cont.) Subspaces, Basis, Dimension, Rank. Coordinates.
3.5 Problems 1--48, 51, 52.

October 22:

3.6. Introduction to Linear Transformations.
3.6 Problems 1--25, 29--39.

October 25:

3.6.(cont.) Introduction to Linear Transformations.
3.6 Problems 1--25, 29--39.

October 27:

Chapter 3 Review. Applications.

October 29:

4.1. Introduction to Eigenvalues and Eigenvectors.
4.1 Problems 1--18.

November 1:

4.2. Determinants. The Laplace Expansion Theorem.
4.2 Problems 1--52.

November 3:

4.2.(cont.) Determinants. Cramer's Rule. Adjoint.
4.2 Problems 57--65.

November 5:

4.3. Eigenvalues and Eigenvectors of $n \times n$ Matrices
4.3 Problems 1--18.

November 8:

4.3. (cont.) Eigenvalues and Eigenvectors of $n \times n$ Matrices
4.3 Problems 1--18.

November 10:

Review

November 12:

Midterm Exam 2

November 15:

4.4. Similarity and Diagonalization.
4.4 Problems 1--41.

November 17:

4.4.(cont.) Similarity and Diagonalization.
4.4 Problems 1--41.

November 19:

5.1. Orthogonality. Orthogonal Matrices.
5.1 Problems 1--21.

November 29:

5.2. Orthogonal Complements and Orthogonal Projections. The Orthogonal Decomposition.
5.2 Problems 1--22.

December 1:

5.2. (cont.) Orthogonal Complements and Orthogonal Projections. The Orthogonal Decomposition.
5.2 Problems 1--22.

December 3:

5.3. The Gram-Schmidt Process.

5.3 Problems 1--14.

December 6:

5.4. Orthogonal Diagonalization of Symmetric Matrices.

5.4 Problems 1--12.

December 8:

5.4. (cont.) Orthogonal Diagonalization of Symmetric Matrices.

5.4 Problems 1--12.

December 10:

Chapters 4 and 5 Review. Applications.

TBA:

Final exam for all day sections