**Math 0280 Spring 2023**

**Schedule and Practice Problems**

**January 9:**Introduction.
1.1. The Geometry and Algebra of Vectors.
1.1 Problems 1-28

**January 11:**1.1. (cont.)

1.1 Problems 1-28

**January 13:**1.2. Length and Angle. The Dot Product.
1.2 Problems 1-52.

**January 18:**1.2. (cont.)

1.3. Lines and Planes.
1.2 Problems 61-67.
1.3 Problems 1-15.

**January 20:**1.3. (cont.).
1.3 Problems 18-30, 35-38.

**January 23:**2.1. Introduction to Systems of Linear Equations.
2.1 Problems 1-38.

**January 25:**2.2. Direct Methods for Solving Linear Systems.
2.2 Problems 1-18.

**January 27:**2.2. (cont.)
2.2 Problems 23-46.

**January 30:**2.3. Spanning Sets and Linear Independence.
2.3 Problems 1-42.

**February 1:**2.3. (cont.)
2.3 Problems 1-42.

**February 3:**Chapters 1 and 2 Review. Applications.

**February 6:**3.1. Matrix Operations.
3.1 Problems 1—22, 31-36.

**February 8:**
3.2. Matrix Algebra.
3.2 Problems 1--28.

**February 10:**
3.3. The Inverse of a Matrix
3.3 Problems 1-23.

**February 13:**
3.3. (cont.)
3.3 Problems 24-40.

**February 15:**
3.3. (cont.)

3.3 Problems 48-59.

**February 17: Review.**

**February 20: Midterm Exam 1**

**February 22:**3.5. Subspaces, Basis, Dimension, and Rank.
3.5 Problems 1-48, 51, 52.

**February 24:**3.5. (cont.)

3.5 Problems 1-48, 51, 52.

**February 27:**3.5. (cont.)

3.5 Problems 1-48, 51, 52.

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

**March 3:**3.6. (cont.)

3.6 Problems 1-25, 29-39.

**March 13:**Chapter 3 Review. Applications.

**March 15:**4.1. Introduction to Eigenvalues and Eigenvectors.
4.1 Problems 1-18.

**March 17:**4.2. Determinants.
4.2 Problems 1-52.

**March 20:**4.2. (cont.)

4.2 Problems 57-65.

**March 22:**4.3. Eigenvalues and Eigenvectors of n x n Matrices
4.3 Problems 1-18.

**March 24:**4.3. (cont.)

4.3 Problems 1-18.

**March 27: Review.**

**March 29: Midterm Exam 2**

**March 31:**4.4. Similarity and Diagonalization.
4.4 Problems 1-41.

**April 3:**4.4. (cont.)

4.4 Problems 1-41.

**April 5:**5.1. Orthogonality.
5.1 Problems 1-21.

**April 7:**5.2. Orthogonal complements and Orthogonal Projections.
5.2 Problems 1-22.

**April 10:**5.2. (cont.)

5.2 Problems 1--22.

**April 12:**5.3. The Gram-Schmidt Process.
5.3 Problems 1-14.

**April 14:**5.4. Orthogonal Diagonalization of Symmetric Matrices.
5.4 Problems 1-12.

**April 17:**5.4. (cont.)

5.4 Problems 1-12.

**April 19:**Chapters 4 and 5 Review. Applications.

**April 21: Review**

**Tuesday, April 25, 2:00 – 3:50 PM:
Final exam for all sections**