McMaster University

Mathematics and Statistics

$$\int_M d\omega = \int_{\partial M} \omega$$

Math 1ZC3
Lecture Schedule

Week 1: September 5-8
- **Lecture 1** - Introduction, 1.1 (Systems of Linear Equations)
- **Lecture 2** - 1.2 (Gaussian Elimination)

Week 2: September 11-15
- **Lecture 3** - 1.3 (Matrices and Matrix Operations)
- **Lecture 4** - 1.3 (continued), 1.4 (Inverses, Properties of Matrices)
- **Lecture 5** - 1.4 (Inverses, Properties of Matrices, Continued)

Week 3: September 18-22
- **Lecture 6** - 1.5 (Elementary Matrices)
- **Lecture 7** - 1.5 (Continued), 1.6 (More on Linear Systems and Invertible Matrices)
- **Lecture 8** - 1.6 (Continued)

Week 4: September 25-29
- **Lecture 9** - 1.7 (Diagonal, Triangular, and Symmetric Matrices)
- **Lecture 10** - 2.1 (Determinants by Cofactor Expansion)
- **Lecture 11** - 2.2 (Evaluating Determinants by Row Reduction)

Week 5: October 2-6
- **Lecture 12** - 2.3 (Properties of Determinants, Omit Cramer's Rule)
- **Lecture 13** - 5.1 (Eigenvalues and Eigenvectors)
- **Lecture 14** - 5.1 (Continued)

Week 7: October 9-13 (Midterm Recess)

Week 6: October 16-20
- **Lecture 15** - 5.2 (Diagonalization)
- **Lecture 16** - 5.2 (Continued)
- **Lecture 17** - 5.5 (Dynamical Systems and Markov Chains)

Week 8: October 23-27
- **Lecture 18** - 5.5 (Continued)
- **Lecture 19** - 10.1, 10.2 (from 9th Edition, Complex Numbers, Division of Complex Numbers)
- **Lecture 20** - 10.3 (from 9th Edition, Polar Form of a Complex Number)

Week 9: October 30 - November 3
- **Lecture 21** - 3.1 (Vectors in 2-space, 3-space, and *n*-space)
- **Lecture 22** - 3.2 (Norm, Dot product, and Distance in R^n)

- **Lecture 23** - 3.3, 3.4 (Orthogonality, The Geometry of Linear Systems)

Week 10: November 6-10
- **Lecture 24** - 3.4 (Continued), 3.5 (Cross Product)
- **Lecture 25** - 4.1 (Real Vector Spaces)
- **Lecture 26** - 4.1 (Continued), 4.2 (Subspaces)

Week 11: November 13-17
- **Lecture 27** - 4.2 (Continued), 4.3 (Spanning Sets, still 4.2 in 11th Edition)
- **Lecture 28** - 4.4 (Linear Independence, 4.3 in 11th Edition)
- **Lecture 29** - 4.4 (Continued), 4.5 (Coordinates and Basis, 4.4 in 11th Edition)

Week 12: November 20-24
- **Lecture 30** - 4.5 (Continued)
- **Lecture 31** - 6.3 (Gram-Schmidt Process, Omit Example 9 and QR-Decomposition)
- **Lecture 32** - 6.3 (Continued), 4.6 (Dimension, 4.5 in 11th Edition)

Week 13: November 27 - December 1
- **Lecture 33** - 4.6 (Continued), 4.8 (Row Space, Column Space, and Null Space, 4.7 in 11th Edition)
- **Lecture 34** - 4.8 (Continued)
- **Lecture 35** - 10.13 Cryptography (10.14 in 11th Edition)

Week 14: December 4-6
- **Lecture 36** - 10.13 (Continued), Review
- **Lecture 37** - Review

(Classes end on December 6th)