McMaster University

Mathematics and Statistics

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

Math 1B03 Term 2/1ZC3

Lecture Schedule (Winter 2017)

Week 1: January 4-6
- **Lecture 1** - Introduction, 1.1 (Systems of Linear Equations)

Week 2: January 9-13
- **Lecture 2** - 1.2 (Gaussian Elimination)
- **Lecture 3** - 1.3 (Matrices and Matrix Operations)
- **Lecture 4** - 1.3 (continued), 1.4 (Inverses, Properties of Matrices)

Week 3: January 16-20
- **Lecture 5** - 1.4 (Inverses, Properties of Matrices, Continued)
- **Lecture 6** - 1.5 (Elementary Matrices)
- **Lecture 7** - 1.5 (Continued), 1.6 (More on Linear Systems and Invertible Matrices)

Week 4: January 23-27
- **Lecture 8** - 1.6 (Continued)
- **Lecture 9** - 1.7 (Diagonal, Triangular, and Symmetric Matrices)
- **Lecture 10** - 2.1 (Determinants by Cofactor Expansion)

Week 5: January 30 - February 3
- **Lecture 11** - 2.2 (Evaluating Determinants by Row Reduction)
- **Lecture 12** - 2.3 (Properties of Determinants, Omit Cramer's Rule)
- **Lecture 13** - 5.1 (Eigenvalues and Eigenvectors)

Week 6: February 6-10
- **Lecture 14** - 5.1 (Continued)
- **Lecture 15** - 5.2 (Diagonalization)
- **Lecture 16** - 5.2 (Continued)

Week 7: February 13-17
- **Lecture 17** - 5.5 (Dynamical Systems and Markov Chains)
- **Lecture 18** - 5.5 (Continued)
- **Lecture 19** - 10.1, 10.2 (from 9th Edition, Complex Numbers, Division of Complex Numbers)

Week 8: February 20-24 (Midterm Recess)

Week 9: February 27 - March 3
- **Lecture 20** - 10.3 (from 9th Edition, Polar Form of a Complex Number)
- **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)

Week 10: March 6-10
- **Lecture 23** - 3.3, 3.4 (Orthogonality, The Geometry of Linear Systems)
- **Lecture 24** - 3.4 (Continued), 3.5 (Cross Product)
- **Lecture 25** - 4.1 (Real Vector Spaces)

Week 11: March 13-17
- **Lecture 26** - 4.1 (Continued), 4.2 (Subspaces)

- **Lecture 27** - 4.2 (Continued)
- **Lecture 28** - 4.3 (Linear Independence)

Week 12: March 20-24
- **Lecture 29** - 4.3 (Continued), 4.4 (Coordinates and Basis)

- **Lecture 30** - 4.4 (Continued)
- **Lecture 31** - 6.3 (Gram-Schmidt Process, Omit Example 9 and QR-Decomposition)

Week 13: March 27-31
- **Lecture 32** - 6.3 (Continued), 4.5 (Dimension)

- **Lecture 33** - 4.5 (Continued), 4.7 (Row Space, Column Space, and Null Space)

- **Lecture 34** - 4.7 (Continued)

Week 14: April 3-6
- **Lecture 35** - 10.14 Cryptography
- **Lecture 36** - 10.14 (Continued), Review

- **Lecture 37** - Review

(Clases end on April 6th)