McMaster University

Mathematics and Statistics

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

Math 1A03/1ZA3
Lecture Schedule (Fall 2016)

Week 1: September 6-9
- **Lecture 1** - Introduction, Appendix D (Review of Trigonometry)
- **Lecture 2** - Appendix D (Continued), 1.5 (1.6 in 7th Ed., Inverse Functions and Logarithms)
- **Lecture 3** - 1.5 (1.6 in 7th Ed., Continued)

Week 2: September 12-16
- **Lecture 4** - 2.5 (Continuity and Review of Limits)
- **Lecture 5** - 2.5 (Intermediate Value Theorem)
- **Lecture 6** - 2.7 (Derivatives and Rates of Change)

Week 3: September 19-23
- **Lecture 7** - 2.8 (The Derivative as a Function)
- **Lecture 8** - 3.1 (Derivatives of Polynomials and Exponential Functions), 3.2 (The Product and Quotient Rule), 3.3 (Derivatives of Trigonometric Functions)
- **Lecture 9** - 4.8 (Newton's Method)

Week 4: September 26-30
- **Lecture 10** - 3.4 (The Chain Rule), 3.5 (Implicit Differentiation)

- **Lecture 11** - 3.5 (Continued, **Note:** Do Exercise 77(a) in 3.5, or state the result in class), 3.6 (Derivatives of Logarithmic Functions)

- **Lecture 12** - 3.11 (Hyperbolic Functions)

Week 5: October 3-7
- **Lecture 13** - 4.1 (Maximum and Minimum Values)
- **Lecture 14** - 4.2 (Mean Value Theorem)
- **Lecture 15** - 4.3 (How Derivatives Affect the Shape of a Graph)

Week 6: October 10-14 (Midterm Recess)

Week 7: October 17-21
- **Lecture 16** - 4.4 (Indeterminate Forms and L'Hospital's Rule)
- **Lecture 17** - 4.5 (Summary of Curve Sketching)
- **Lecture 18** - 4.5 (Continued)

Week 8: October 24-28
- **Lecture 19** - 4.7 (Optimization Problems)

- **Lecture 20** - 4.9/5.4 (Antiderivatives, Introduce indefinite integral notation from Section 5.4 while doing 4.9)
- **Lecture 21** - Appendix E (Omit Mathematical Induction)

Week 9: October 31 - November 4
- **Lecture 22** - 5.1 (Area and Distance)
- **Lecture 23** - 5.2 (The Definite Integral)
- **Lecture 24** - 5.3 (Fundamental Theorem of Calculus)

Week 10: November 7-11
- **Lecture 25** - 5.5 (The Substitution Rule)
- **Lecture 26** - 6.1 (Areas Between Curves)
- **Lecture 27** - 6.2 (Volumes)

Week 11: November 14-18
- **Lecture 28** - 6.2 (Continued), 6.4 (Work)
- **Lecture 29** - 6.5 (Average Value of a Function), 7.1 (Integration by Parts)

- **Lecture 30** - 7.1 (Continued)

Week 12: November 21-25
- **Lecture 31** - 7.2 (Trigonometric Integrals)
- **Lecture 32** - 7.3 (Trigonometric Substitution)
- **Lecture 33** - 7.4 (Integration of Rational Functions by Partial Fractions, omit rationalizing substitutions)

Week 13: November 28 - December 2
- **Lecture 34** - 7.4 (Continued)
- **Lecture 35** - 8.1 (Arc Length)
- **Lecture 36** - 7.5 (Integration Strategy)

Week 14: December 5-7
- **Lecture 37** - Review

(Clases end on December 7th)