# MATH 1300 (Fall 2006)

Schedule

**Week 1**

08/28–29 1.1: Functions
- Review as needed: coordinate systems and lines (web Appendix F), quadratic functions (web Appendix G), absolute value (web Appendix E), interval notation (web Appendix D)[1]

1.4: Families of functions (up to and including 'Algebraic functions')

08/30
- Trigonometric functions (Appendix A)

09/01 1.3: New functions from old (up to and including 'Expressing a function ...')
- Expressing quadratic functions as a composition of $y = x^2$ and linear functions (completing the square, web Appendix G)

**Week 2**

09/06 1.3: New functions from old (from 'New functions from old' )
1.4: Families of functions (from 'The families $y = A \sin Bx$ ...')

09/08 1.5: Inverse functions; inverse trigonometric functions

**Week 3**

09/11 1.6: Exponential and logarithmic functions (up to and including 'Change of base ...')

09/13 2.1: Limits (An intuitive approach)

09/15 2.2: Computing limits

**Week 4**

09/18 2.3: Limits at infinity; end behavior of a function

09/20 **Review for Exam 1**

09/22 2.5: Continuity

**Week 5**

09/25 2.6: Continuity of trigonometric and inverse functions

09/27 3.1: Tangent lines, velocity, and general rates of change

09/29 3.2: The derivative function

**Week 6**

10/02 3.3: Techniques of differentiation
3.4: The product and quotient rules ('Derivative of a product')

10/04 3.4: The product and quotient rules ('Derivative of a quotient')
3.5: Derivatives of trigonometric functions

10/06 3.6: The chain rule

**Week 7**

10/09 4.1: Implicit differentiation

10/11 3.7: Related rates

10/13 4.2: Derivatives of logarithmic functions

**Week 8**

10/16 4.3: Derivatives of exponential and inverse trigonometric functions

10/18 **Review for Exam 2**

10/20 4.4: L'Hospital's Rule; indeterminate forms

[1]The web appendices are available through the 'Read, Study & Practice' section of WileyPLUS.

**Week 9**

10/23 5.1: Analysis of functions I: Increase, decrease, and concavity

10/25 5.2: Analysis of functions II: Relative extrema; Graphing polynomials

10/27 5.3: More on Curve Sketching: Rational functions; Curves with cusps and vertical tangent lines; Using technology ('Properties of graphs' and 'Graphing rational functions')

**Week 10**

10/30 5.3: More on Curve Sketching: Rational functions; Curves with cusps and vertical tangent lines; Using technology (From 'Rational functions with oblique or curvilinear asymptotes')

- Review long division

11/1 5.4: Absolute maxima and minima

11/3 5.5: Applied maximum and minimum problems ('Classification of optimization problems' and 'Problems involving finite closed intervals')

**Week 11**

11/6 5.5: Applied maximum and minimum problems (From 'Problems involving intervals that are not both finite and closed')

11/8 5.7: Rolle's Theorem; Mean-Value Theorem

11/10 6.1: An overview of the area problem (ONLY 'The area problem' and 'The rectangle method for finding areas')

6.4: The definition of area as a limit; sigma notation (up to and including 'A definition of area')

**Week 12**

11/13 6.4: The definition of area as a limit; sigma notation (from 'Net signed area')

6.5: The definite integral

11/15 **Review for Exam 3**

11/17 6.6: The Fundamental Theorem of Calculus ('The Mean Value Theorem for integrals', 'Part 2 of the Fundamental Theorem of Calculus')

6.2: Indefinite integral ('Antiderivatives')

6.6: The Fundamental Theorem of Calculus ('The Fundamental Theorem of Calculus')

**Week 13**

11/27 6.2: Indefinite integral ('Indefinite integral')

6.6: The Fundamental Theorem of Calculus (remaining subsections)

11/29 6.2: Indefinite integral (remaining subsections)

12/01 6.3: Integration by substitution

**Week 14**

12/04 6.8: Evaluating definite integrals by substitution

12/06 7.1: Area between two curves

12/08 7.2: Volumes by slicing; Disks and washers

**Week 15**

12/11 7.3: Volumes by cylindrical shells

12/13–15 **Review for the Final Exam**