

MATH 2200
Syllabus

Text: Edwards & Penney, Calculus with Analytic Geometry, 6e, "Early Transcendentals Version", Prentice Hall, 2003

- I. Prelude to calculus**
(Sections 2.1-2.4) (2 weeks)
 - A. Tangent lines (2.1)
 - B. Limits (2.2, 2.3)
 - C. Continuity (2.4)

- II. The derivative and rules for differentiation**
(Sections 3.1 – 3.4) (3 weeks)
 - A. Derivative and rate of change (3.1)
 - B. Basic differentiation rules (3.2)
 - C. Chain rule (3.3)
 - D. Derivatives of algebraic functions (3.4)

- III. Applications of the derivative; derivatives of transcendental functions.**
(Sections 3.5 – 3.9) (3 weeks)
 - A. Maxima and minima of functions on closed intervals (3.5)
 - B. Applied max-min problems (3.6)
 - C. Derivatives of trig functions (3.7)
 - D. Derivatives of exponential, logarithmic and exponential functions (3.8)
 - E. Implicit differentiation and related rates (3.9)

- IV. Mean Value Theorem and applications**
(Sections 4.1 – 4.4) (2 weeks)
 - A. Increments, differentials and linear approximation (4.2)
 - B. Increasing and decreasing functions and the MVT (4.3)
 - C. The first derivative test and applications(4.4)

- V. Curve sketching**
(Sections 4.5-4.7) (1 ½ weeks)
 - A. Simple curve sketching (4.5)
 - B. Higher derivatives and concavity (4.6)
 - C. Advanced curve sketching and asymptotes (4.7)
 - D. Logarithmic and exponential growth (Supplementary Notes)

- VI. Anti-derivatives**
(Sections 5.1 – 5.2) (1 1/2 weeks)
 - A. Anti-derivatives and initial value problems (5.2)
 - B. Separable equations and applications.

Total: 13 weeks, leaving 2 weeks for tests and review.