Calculus I
Syllabus

I. Functions
   A. Library of functions
   B. Different ways of representing functions
   C. Inverse, exponential, and logarithmic functions
   D. Trigonometric and inverse trigonometric functions

II. Limits
   A. The limit, infinite limits, and limits at infinity
   B. Computing limits and the limit laws
   C. Continuity and the intermediate value theorem
   D. Precise definition of the limit

III. Derivatives
   A. Rates of change and the derivative
   B. Differentiation rules for common functions
   C. Product and quotient rules
   D. Chain rule
   E. Implicit differentiation
   F. Related rates
   G. Linear approximations and differentials

IV. Applications of the Derivative
   A. Maximum and minimum values of functions
   B. Graphing functions by hand
   C. Optimization of functions
   D. Rolle's theorem and the mean value theorem
   E. L'Hôpital's rule
   F. Antiderivatives

V. Integrals

    A. Approximating the area under the curve

    B. Definite integrals

    C. Fundamental theorem of calculus

    D. Indefinite integrals

    E. Net change theorem

    F. The substitution rule