MTH111 (was106)

Algebra diagnostic test (count in some way).

Functions:
    Function representations
    Types of functions
    New functions from old

Trig functions at some point during the term as determined by the instructor.

(Estimate of 1 ½ weeks for above 3 areas.)

Limits and limit rules (1 ½ weeks):
    Limits including limit at infinity and infinite limits
    Limit laws
    Continuity
    Tangent lines/slope/secant/rates of change/velocity

Derivative (2 ½ weeks):
    Derivative at a point definition
    Derivative as a function
    Differentiation rules
    Rate of change applications
    Derivatives of trig functions
    Chain rule
    Implicit differentiation
    Higher derivatives
    Related rates

Derivative applications (3 weeks):
    Increasing/decreasing/max/min/concavity
    Asymptotes
    Graphing
    Optimization word problems
    Business and Economics applications as desired

Antidifferentiation (1 ½ weeks):
    Include substitution

Integration (2 ½ weeks):
    Sigma symbol
    Approximating area and notion of Riemann sum
    Definition of integral/properties/interpretation in terms of areas (students do not master the definition)
    FTC and use through substitution
    2nd FTC if desirable

2nd algebra diagnostic test (count in some way) and other tests (1 week).