Math 141: Calculus 1
Fall 2007
Tentative Syllabus

Part 1: Functions

Functions algebraically and graphically; function transformations and symmetry; polynomial, rational, trigonometric, exponential, and logarithmic functions; introduction to Maple

Sections 1.1, 1.2, 1.3, Appendices A, C, D, E, F

Approximately 6 class days

Part 2: Derivatives Intuitively

Estimating derivatives graphically; the relationship between the graphs of a function, its derivative, and its second derivative

Sections 1.4, 1.5, 1.6, 1.7

Approximately 6 class days

Quiz #1 on Parts 1 and 2 anticipated Wednesday 10/3

Part 3: Derivatives Formally

Limits and continuity; the formal definition of the derivative

Sections 2.3, 4.2, 2.1

Approximately 5 class days

Part 4: Calculating Derivatives Algebraically

Derivatives and antiderivatives of the five types of functions; derivatives of products, quotients, and compositions of functions

Sections 2.2, 2.4, 2.6, 2.7, 3.1, 3.2, 3.5

Approximately 6 class days

Quiz #2 on Part 4 (The Differentiation Quiz) anticipated Friday 11/2

Part 5: Applications of Derivatives

Differential equations; slope fields; optimization; related rates; Newton's Method; Taylor polynomials; the Intermediate, Extreme, and Mean Value Theorems

Sections 2.4, 2.5, 2.6, 2.7, 4.1, 4.3, 4.5, 4.6, 4.7, 4.8, 4.9

Approximately 9 class days

Quiz #3 on Parts 3 and 5 anticipated Wednesday 11/28

Part 6: Integrals

Estimating integrals graphically; the Fundamental Theorem of Calculus

Sections 5.1, 5.2, 5.3

Approximately 5 class days

Friday 12/7: Review for final exam

Final exam:

Section 2: Tuesday 12/11 8:00-11:00
Section 3: Monday 12/10 8:00-11:00