

**Southern Regional High School**  
Manahawkin, New Jersey  
**Course Syllabus**

**Department:** Math

**Course:** Calculus I

Marking Period 1

Topics/Units to be covered:

- Classroom expectations/grading
- Review of prerequisite skills
- Limits, continuity, & formal definition of a derivative
- Rules of derivatives: power rule, product rule, & quotient rule
- Quarterly

Marking Period 2

Topics/Units to be covered:

- Intro to derivatives of trig functions
- Chain rule & implicit differentiation
- Related rates
- Mean Value Theorem, Extreme Value Theorem
- First Derivative Test, Second Derivative Test
- Quarterly

Marking Period 3

Topics/Units to be covered:

- Optimization
- Anti-derivatives, definite & indefinite integrals
- Area under a curve; total area vs. net area
- U-substitution
- Review of logarithmic and exponential functions
- Derivatives and integrals of logarithmic and exponential functions
- Quarterly

Marking Period 4

Topics/Units to be covered:

- Derivatives and integrals of logarithmic and exponential functions
- Logarithmic differentiation
- Integration by parts
- Partial fractions
- Area between two curves
- Volume, surface area, & arc length
- Final Exam