

Calculus SYLLABUS

1st Marking Period

Test (Ch. P, Review Packet)

- P1-P2 - Graphs and Models
- P3 - Functions and Their Graphs
- P4 & P5 - Inverse, Exponential, and Logarithmic Functions
- Review – Trigonometry, Trig Functions, and their Inverses

Test (Ch. 1)

- 1.1 - A Preview of Calculus
- 1.2 - Finding Limits Graphically and Numerically
- 1.3 - Evaluating Limits Analytically
- 1.4 - Continuity and One-Sided Limits
- 1.5 - Infinite Limits
- 1.6 - Limits at Infinity
- 1.2, 1.3 - Precise Definition of Limits (time permitting)

Test (Ch. 2.1 - 2.2)

- 2.1 - The Derivative and the Tangent Line Problem
- 2.2 - Basic Rules of Differentiation and Rates of Change

2nd Marking Period

Test (Ch. 2.3-2.4)

- 2.3 - The Product and Quotient Rules and Higher Order Derivatives
- 2.4 - The Chain Rule

Test (Ch. 2.5-2.6)

- 2.5 - Implicit Differentiation
- 2.6 - Derivatives of Inverse Functions

Test (Ch. 2.7-2.8)

- 2.7 - Related Rates
- 2.8 - Newton's Method (if time permits)

Midterm (Ch. P, Ch. 1. Ch. 2)

3rd Marking Period

Test (3.1, 3.3, 3.4 and 3.5)

- 3.1-Extrema on an Interval
- 3.3-Increasing and Decreasing Functions and First Derivative Test
- 3.4-Concavity and Second Derivative Test
- 3.5-A Summary of Curve Sketching-Graphing Functions

Test (3.2 and 3.6)

- 3.2-Rolle's Theorem and Mean Value Theorem
- 3.6-Optimization Problems

Test (3.2 and 7.7)

- 3.7- Linear Approximation and Differentials
- 7.7-Indeterminate Forms and *L'Hôpital's* Rule

4th Marking Period

Test (4.1-4.3)

- 4.1-Antiderivatives
- 4.2-Area-Approximating areas under the Curve
- 4.3 Riemann Sums and Definite Integrals

Test (4.4 and 4.6)

- 4.4-Fundamental Theorem of Calculus
*Include Mean Value Theorem for Integrals and Average Value of a Function
- 4.6-Integration by Substitution

Test (4.7 and 6.1)

- 4.7-The Natural Logarithm of Functions: Integration
- 6.1- Area of Region Between Two Curves

Cumulative Final Exam (Ch. P – 4, 6.1)

Course Expectations and Skills

- Students are required to have proficiency in all prerequisite topics for Calculus. Those who do not demonstrate proficiency will be required to seek additional help after school to close their achievement gap in order to be successful in this course.
- Students are required to take notes and maintain those notes in a neat and organized notebook.
- Students are to bring their Chrome Book charged and ready to use for the lesson.
- Students are encouraged to have a graphing calculator.
- Students are required to participate in both small and large group discussions and activities, as directed

Resources

Text Book: Calculus for AP 2nd Edition, Ron Larson and Paul Battaglia
Additional Resources:

- <https://sso.cengage.com/cb/>
- WebAssign
- CalcChat.com
- CalcView.com
- Desmos and Desmos Teacher Activities

Assessment Information
Department of Mathematics

Marking Periods 1 - 4	
Category	Percentage
Major	55%
Minor	35%
Homework	10%