AP Calculus AB

2023-2024 Course Syllabus

Instructor: Mr. J. Jaramillo **Conference: 3rd Block**

TEXTBOOK
Calculus for AP, Larson and Battaglia

TECHNOLOGY
CALCULATOR: TI-nSpire CAS

COURSE OBJECTIVE

The course overview and objectives for Calculus AB are followed as it appears in the AP Calculus course description. This course covers topics in differential and integral calculus. The student will pursue these topics through lectures and self-study. Advanced Placement Calculus AB is designed as a college-level Calculus course. Students will study topics dealing with applications of differentiation and integration. The goal is to expose students and provide them with a solid foundation for future college mathematics courses.

ATTENDANCE
Attendance is a MUST. Along with being present for every class, it is extremely important that all students take notes on a daily basis. This course will provide students with valuable information, so note taking will be strongly emphasized.

METHODS OF INSTRUCTION

Lectures	Teacher Modeling	Small Group Instruction
Socratic Discussion	Question/Answer	One to One Tutoring
Peer Teaching	Guided Practice	Independent Practice

MATERIALS
1 Composition Book/Notebook
Pen/Pencils

HOMEWORK
Due on the date given to the student.

TUTORING/RE-TEST
Monday: 4:00 – 5:00PM

Section	Topic	Homework/Classwork
Chapter 1	Limits and Their Properties	
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	
Chapter 2	Differentiation	
2.1	The Derivative and the Tangent Line Problem	
2.2	Basic Differentiation Rules and Rates of Change	
2.3	Product and Quotient Rules and Higher-Order Derivatives	
2.4	The Chain Rule	
2.5	Implicit Differentiation	
2.6	Derivatives of Inverse Functions	
2.7	Related Rates	
Chapter 3	Applications of Differentiation	
3.1	Extrema on an Interval	
3.2	Rolle's Theorem and the Mean Value Theorem	
3.3	Increasing and Decreasing Functions and the First Derivative Test	
3.4	Concavity and the Second Derivative Test	
3.5	A Summary of Curve Sketching	
3.6	Optimization Problems	
Chapter 4	Integration	
4.1	Antiderivatives and Indefinite Integration	
4.2	Area	
4.3	Riemann Sums and Definite Integrals	
4.4	The Fundamental Theorem of Calculus	

Section	Topic	Homework/Classwork
4.5	Integration by Substitution	
4.6	The Natural Logarithmic Function: Integration	
Chapter 5	Differential Equations	
5.1	Slope Fields	
Chapter 6	Applications of Integration	
6.1	Area of a Region Between two Curves	
6.2	Volume: The Disk and Washer Methods	