AP Precalculus 2024-2025 Syllabus

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**Course Description:** This course is designed to better prepare students for college-level calculus and provide grounding for other mathematics and science

courses. This is a college level course in Precalculus and will reflect so through the rigor and quantity of work required for students to succeed. Technology will be used throughout the course as a tool to explore concepts. Below is an outline of the topics covered in this course.

# Course Outline:

Semester 1

* Unit 1: Polynomial and Rational Functions
	+ Change in Tandem
	+ Rates of Change
	+ Rates of Change in Linear and Quadratic Functions
	+ Polynomial Functions and Rates of Change
	+ Polynomial Functions and Complex Zeros
	+ Polynomial Functions and End Behavior
	+ Rational Functions and End Behavior
	+ Rational Functions and Zeros
	+ Rational Functions and Vertical Asymptotes
	+ Rational Functions and Holes
	+ Equivalent Representations of Polynomial and Rational Expressions
	+ Transformations of Functions
	+ Function Model Selection and Assumption Articulation
	+ Function Model Construction and Application
* Unit 2: Exponential and Logarithmic Functions
	+ 2.1 Change in Arithmetic and Geometric Sequences
	+ 2.2 Change in Linear and Exponential Functions
	+ 2.3 Exponential Functions
	+ 2.4 Exponential Function Manipulation
	+ 2.5 Exponential Function Context and Data Modeling
	+ 2.6 Competing Function Model Validation
	+ 2.7 Composition of Functions
	+ 2.8 Inverse Functions
	+ 2.9 Logarithmic Expressions
	+ 2.10 Inverses of Exponential Functions Semester 2
* Unit 2: Exponential and Logarithmic Functions
	+ 2.11 Logarithmic Functions
	+ 2.12 Logarithmic Function Manipulation
	+ 2.13 Exponential and Logarithmic Equations and Inequalities
	+ 2.14 Logarithmic Function Context and Data Modeling
	+ 2.15 Semi-log Plots
* Unit 3: Trigonometric and Polar Functions
	+ 3.1 Periodic Phenomena
	+ 3.2 Sine, Cosine, and Tangent
	+ 3.3 Sine and Cosine Function Values
	+ 3.4 Sine and Cosine Function Graphs
	+ 3.5 Sinusoidal Functions
	+ 3.6 Sinusoidal Function Transformations
	+ 3.7 Sinusoidal Function Context and Data Modeling
	+ 3.8 The Tangent Function
	+ 3.9 Inverse Trigonometric Functions
	+ 3.10 Trigonometric Equations and Inequalities
	+ 3.11 The Secant, Cosecant, and Cotangent Functions
	+ 3.12 Equivalent Representations of Trigonometric Functions
	+ 3.13 Trigonometry and Polar Coordinates
	+ 3.14 Polar Function Graphs
	+ 3.15 Rates of Change in Polar Functions
* AP Exam: May
* Portions of Unit 4: Functions Involving Parameters, Vectors, and Matrices (Not on AP Exam)

**Materials:** You are expected to bring your charged Chromebook, pencils, paper, and school planner daily. You can bring your own TI 84 graphing calculator or use one from the class set. A graphing calculator is required on parts of the AP Precalculus exam and for this course.

**Textbook:** Sullivan, M., & Sullivan, M. (2017). *Precalculus Enhanced with Graphing Utilities.* New York: Pearson. You can leave the textbook at home, it is heavy I will provide pages digitally in class.

**Grading Policy:** Grades will be posted in Aeries.

|  |  |
| --- | --- |
| **Grading Category** | **Percent of Grade** |
| Minor grade(Homework/Classwork/Projects) | 60% |
| Major grades (Quizzes/(Chapter Tests / Semester Final) | 40% |

# Grading Scale:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 97% - 100% | A+ | 93% - 96.9% | A | 90% - 92.9% | A- |
| 87% - 89.9% | B+ | 83% - 86.9% | B | 80% - 82.9% | B- |
| 77% - 79.9% | C+ | 73% - 76.9% | C | 70% - 72.9% | C- |
| 67% - 69.9% | D+ | 63% - 66.9% | D | 60% - 62.9% | D- |

59.9% or below F

**Homework:** All homework will be graded for completion, not correctness. Show all work. All homework assignments will be posted in Google Classroom. If you turn them in digitally, you still must show all work for full credit. You will grade each other’s homework in class for correctness.

**Late work:** Late homework will be accepted for half credit until the quiz or test covering the assignment. Late classwork will be accepted up to 5 days after the assignment due date, unless you were absent.

**Extra Credit**: If you turn in all assignments on time for the semester you will receive extra credit points in the Assignments Grading Category. If you see I made a mistake on the board or in my slides, raise your hand. I’ll call on the first hand raised. If you are correct about my mistake you’ll get one extra credit point in the Assignments Grading Category. There will be at least one extra credit assignment available per quarter.

**Tests**: Test re-takes will not be allowed. You can do test corrections to increase your test grade up to 70% . Test corrections must be scheduled during lunch or after school within one week of receiving the test score.

**Attendance Policy**: If you have an excused absence, you have 2 days for each day absent to complete missed assignments (homework, classwork, and warm-ups). All assignments will be posted on Google Classroom. You will have to contact me when you return to schedule any missed quizzes or tests. If you only missed the day before a quiz or test

(a review day where we take a practice quiz or test), you will still be required to take the test on the day you return with the rest of the class. Practice quizzes/tests will be posted in Google Classroom.

# Behavioral expectations:

# Every student is responsible for helping to maintain a clean, safe learning environment. Your area must remain CLEAN at all times. The floor should be clear of trash, paper, and personal belongings. Adhere to all policies, rules, and regulations outlined in the student handbook.

# Be Ready

#  Come prepared for class when the bell stops ringing. This means have the materials needed for class, have the “I can do it” attitude, be ready to do your best, and be ready to begin the day’s work. Materials you will need to bring to class include textbook (when necessary), binder, assignments and appropriate writing instruments (pencil). (If the student is not sitting in a desk and working on warm-up when the bell rings, THEY WILL BE MARKED TARDY!)

#  BE RESPECTFUL OF \_\_\_\_\_\_\_\_

# ME (THE TEACHER)

# YOUR CLASSMATES

# MY CLASSROOM

#

#  BE RESPONSIBLE FOR YOUR\_\_\_\_\_\_\_\_\_

# ATITUDE

# GRADE

# DEDCISIONS

# STUFF

# If you choose not meet the above expectations the follow will be your consequences:

# First offense -Warning- teacher and student will have a short conversation about what is expected and why.

# Second offense- parent contact- parent will be notified of the possible next steps if behavior continues

# Third offense- parent phone call and referral

\* The above steps may be skipped for certain behaviors.

**Teacher Availability**: Please email me if you have questions or need help. If you don’t receive a response to your email within 24 hours, please send me another email. I will be available 3:30-4:00 for questions and/or tutoring on Tuesdays and Thursdays. I will also be available during lunch by appointment only.

# I have read and understand the AP Precalculus course syllabus. I agree to follow the student expectations and policies in this syllabus.

Student Name Student Signature Date

Parent Name Parent Signature Date