Madison Central High School

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AP Precalculus Course Syllabus 2025-2026

Tutorials: 7:45 am – 8:15 am Monday and Wednesday (schedule only)

Course Overview

AP Precalculus prepares you for other college-level mathematics and science courses. Through regular practice, you build deep mastery of modeling and functions, and you will examine scenarios through multiple representations.

Classroom Expectations

- Arrive promptly (with charged MacBook) and be prepared to start Do now immediately (after homework is turned in designated location)
- Actively participate in all class assignments and discussions and be ready to answer and/or respond appropriately in a timely manner
- Always be respectful to teacher and fellow classmates
- Follow MCSD and Madison Central High School rules and policies

Electronic Devices

Your school issued MacBook is required for instruction in this class. Many classwork assignments (especially Practice-Homework) will require you to use your MacBook. You may not use your cell phone, smart watch, or any other electronic device (other than your school issued MacBook) during instructional time or any time in class without prior teacher approval.

Bookbags will be stored away at front of the classroom during instructional time and during all major tests and quizzes. You may not have ear buds, headphones, or any other electronic device (other than school issued MacBook) in/on you while in class, during instructional time or anytime.

Required Text/Materials

- School issued MacBook Air
- Graphing calculator
- AP Classroom
- 3-Ring Binder (recommend at least 2 inch)
- Blank notebook paper and/or graph paper
- Pencil to complete all assignments
- Colored Pens/Highlighters for taking clear/informative notes (recommended)
- 5 binder tabs

Course Units from "AP Course and Description"

Unit 1: Polynomial and Rational Functions
Unit 2: Exponential and Logarithmic Functions
Unit 3: Trigonometric and Polar Functions
Unit 4: Functions Involving Parameters, Vectors, and Matrices

Note: Unit 4 is not tested on the AP Exam

Assignments

You will *have* ***Practice-Homework*** assigned each class period that will be due by 11:59 pm the night before class (check Canvas for specific details on submitting Practice-Homework). Majority of Practice-Homework will be checked for completeness. However, occasionally selective problem from Practice-Homework may be graded for accuracy. Also, some assignments will be assigned in AP Classroom. Since the material in AP Classroom is aligned with the actual objectives in the "Course and Description" for the AP Precalculus exam item, expect to read, listen to, and or work everything provided for you in AP Classroom.

Grading

Daily grades (Do Nows, Practice-Homework), Notebook Check, Classwork	34%
Major Tests, Major Quizzes, AP Practice Tests	66%

A	B	C	D	F
90 or above	80 to 89	70 to 79	65 to 69	64 and below

Late Work Policy

Late ***Practice-Homework*** will be accepted; however, Canvas is programmed to automatically deduct points each day an assignment is late. Just as with Practice-Homework submitted on time, late assignments must be submitted *in Canvas and the original assignment must be initialed by me (teacher).* Remember, when you submit homework in Canvas, the assignment will be time stamped. If for some reason, there is an emergency/situation that may prevent you from turning in a ***Practice-Homework*** assignment (or any other assignment) on time you must let me know immediately (if possible)—preferably through Canvas email as soon as possible. Please note that this policy also applies to assignments given in AP Classroom.

Makeup Major Test/Quiz Policy

It is your (the student's) responsibility to make up any assignments missed. If you miss a ***major test and/or quiz***, you will need to make the assignment up as soon as you return to school. Dates of all major tests and/or quizzes will be announced (and posted in Canvas) at least two class days before the date of administration. Any missed major test and/or quiz must be made up before school (see page 1 for tutorial times) in my classroom. Please preschedule any makeup test and/or quiz with me to ensure I will be available prior to just showing up to makeup a test or quiz. *Please do not ask me about making up a test or quiz during class or coming to my room during another period of school day to attempt to makeup a major test/quiz*. Please know and follow all rules outlined in MCSD handbook about making up missed work to ensure your academic progress is not negatively affected by missed assignments.

Tardiness

Regular school attendance is paramount to your academic success. You will be expected to be in the classroom and in your assigned seat when the tardy bell rings. If you are tardy, I will not admit you to class without an admit slip from the school attendance office. I record all tardies.

AP Precalculus

Unit 1A - Polynomial and Rational Functions

1.1 Change in Tandem
1.2 Rates of Change
1.3 Rates of Change in Linear and Quadratic Functions
1.4 Polynomial Functions and Rates of Change
1.5A Polynomial Functions and Complex Zeros
1.5B Even and Odd Polynomials
1.6 Polynomial Functions and End Behavior
Unit 1A REVIEW

Unit 1B - Polynomial and Rational Functions

1.7A Rational Functions and End Behavior
1.7B Rational Functions and End Behavior
1.8 Rational Functions and Zeros
1.9 Rational Functions and Vertical Asymptotes
1.10 Rational Functions and Holes
1.11A Equivalent Expressions and Binomial Theorem
1.11B Polynomial Long Division and Slant Asymptotes
1.12A Translations of Functions
1.12B Dilations of Functions
1.13 Function Model Selection and Assumption Articulation
1.14 Function Model Construction and Application
Unit 1B REVIEW

Unit 2A - 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.A Exponential Function Context and Data Modeling
- 2.5.B Exponential Function Context and Data Modeling
- 2.6 Competing Function Model Validation
- 2.7A Composition of Functions
- 2.7B Composition of Functions
- 2.8 Inverse Functions
- Unit 2A REVIEW

Unit 2B - Exponential and Logarithmic Functions

- 2.9 Logarithmic Expressions
- 2.10 Inverses of Exponential Functions
- 2.11 Logarithmic Functions
- 2.12 Logarithmic Function Manipulation
- 2.13A Exponential and Logarithmic Equations and Inequalities
- 2.13B Exponential and Logarithmic Equations and Inequalities
- 2.14 Logarithmic Function Context and Data Modeling
- 2.15 Semi-log Plots
- Unit 2B REVIEW

Unit 3B - Trigonometric and Polar Functions

- 3.8 The Tangent Function
- 3.9 Inverse Trigonometric Functions
- 3.10 Trigonometric Equations and Inequalities
- 3.11 The Secant, Cosecant, and Cotangent Functions
- 3.12A Equivalent Representations of Trigonometric Functions
- 3.12B Equivalent Representations of Trigonometric Functions
- 3.13 Trigonometry and Polar Coordinates
- 3.14A Polar Function Graphs
- 3.14B Polar Function Graphs
- 3.15 Rates of Change in Polar Functions
- Unit 3B REVIEW

Unit 4A - Functions Involving Parameters, Vectors, and Matrices

- 4.1 Parametric Functions
- 4.2 Parametric Functions Modeling Planar Motion
- 4.3 Parametric Functions and Rates of Change
- 4.4 Parametrically Defined Circles and Lines
- 4.5 Implicitly Defined Functions
- 4.6A Conic Sections - Parabolas
- 4.6B Conic Sections - Ellipses
- 4.6C Conic Sections - Hyperbolas
- 4.7 Parametrization of Implicitly Defined Functions
- Unit 4A REVIEW

Unit 4B - Functions Involving Parameters, Vectors, and Matrices

- 4.8A Vectors
- 4.8B Vectors
- 4.9 Vector-Valued Functions
- 4.10 Matrices
- 4.11 The Inverse and Determinant of a Matrix
- 4.12 Linear Transformations and Matrices
- 4.13A Matrices as Functions
- 4.13B Matrices as Functions
- 4.14 Matrices Modeling Contexts
- Unit 4B REVIEW