

AP Precalculus

2025–2026 Academic Year

Instructor Information

Instructor: Jan Bierowiec

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Office Hours: Mo 3:00–3:30, Tu 3:00–3:30, Th 3:00–3:30, Fr 3:00–4:00

Course Description

AP Precalculus centers on functions modeling dynamic phenomena. This research-based exploration of functions is designed to better prepare students for college-level calculus and provide foundational skills for other mathematics and science courses.

Throughout this course, students develop and hone symbolic manipulation skills. Functions and their compositions, inverses, and transformations are understood through graphical, numerical, analytical, and verbal representations. These representations reveal different attributes of functions and are useful for solving problems in mathematical and applied contexts. Students will communicate a deep understanding of mathematical phenomena.

Learning Outcomes

Students will be able to:

1. Analyze polynomial, rational, exponential, logarithmic, and trigonometric functions.
2. Apply transformations, compositions, and inverses.
3. Interpret rates of change, zeros, and end behavior.
4. Model exponential and periodic phenomena.
5. Communicate mathematical reasoning clearly and precisely.

Class Policies

1. Be responsible.
2. Be respectful.
3. Communicate.
4. Your work must be your own.

Required Materials

- Graphing calculator
- Pencil (or erasable pen)
- Binder (notebook or blank pages recommended)

Course Structure

Daily Quizzes: Every class begins with a brief 5-minute quiz reviewing the previous lesson.

Notes: Guided notes are provided for all topics. Completed notes will be posted prior to each test for review (not after each class period). If absent, obtain notes from a classmate and schedule a review meeting.

Homework: Regular assignments reinforce learning. Success depends on consistent effort.

Grading Breakdown

Tests	40%
Daily Quizzes	30%
Homework	20%
Classwork	10%

Late Work Policy

All work is due at the start of the class period for which it is assigned. Missing or incomplete work will be penalized 10% per day unsubmitted.

Major Topics

- Polynomial & Rational Functions:
 - Rates of change
 - Zeroes
 - End behavior
 - Transformations
 - Modeling
- Exponential & Logarithmic Functions:
 - Changing functions
 - Manipulating functions
 - Compositions of functions
 - Inverses of functions
 - Inequalities
 - Modeling
 - Semi-log plots
- Trigonometric Functions:
 - Graphing
 - Transformations
 - Modeling
- Polar Functions:
 - Graphing
 - Transformations
 - Modeling

Communication Expectations

Students are responsible for:

- Checking myLS regularly
- Obtaining notes if absent
- Communicating early regarding academic concerns