

Hawthorne Academy of Health Sciences

Precalculus Syllabus

My name is Mr. Melito. Welcome to Precalculus! I can't tell you how excited I am to guide you through this phase of your high school career. I look forward to watching you grow as a student and as a person. I hold a Bachelor's of Science degree in Physics from NC State University. I will lead our classroom in a way that is thoughtful, caring, purposeful, and fun.

Course Description

This is the fourth course in a sequence of courses designed to provide students with a rigorous program of study in mathematics. It includes exponential and logarithmic functions, vectors, polynomial functions of higher degree, limits of functions, conic sections, and trigonometry. (*Prerequisite: Successful completion of Mathematics 3 or equivalent*).

Instruction and assessment will include the appropriate use of manipulatives and technology. Topics will be represented in multiple ways, such as concrete/pictorial, verbal/written, numeric/data-based, graphical, and symbolic. Concepts will be introduced and used, where appropriate, in the context of realistic phenomena.

Precalculus is scheduled for 18 weeks of study in which you will be exposed to the above concepts in various ways. We will discuss these concepts in detail throughout our class conversations. My goal for you is to not only be prepared for Calculus, but to be better prepared for life. One way we will achieve this goal is by making *you* the center of our learning environment.

Textbook(s) and Other Resources Used:

- ✚ Precalculus, by published 2011 by Glencoe/McGraw-Hill
- ✚ Khan Academy
- ✚ Desmos
- ✚ Geogebra

Materials Required

- 1 or ½ inch 3 ring binder
- Pencils
- Graph paper
- Graphing calculator (TI 83+ or TI 84) for home-use; optional

Course Evaluations

Each of you will be evaluated on the basis of performance in each of the following areas:

Note: You will be notified in advance if our grading percentages change. We will also be following the district grading scale.

70% Formal Assessments (tests, quizzes projects)

30% Informal assessments (homework, class work)

Grade Scale:

100-90:	A
89-80:	B
79-70:	C
69-60:	D
59-0:	F

Regular math tutoring will be available on Mondays and Thursdays from 2:15-3:30. Additional tutoring is available by appointment. Let me know by the end of the class period if you intend to stay for that day. **You** are responsible for after-school transportation, and you aren't required to stay for an entire block of supplemental support.

Retesting procedures: Students who score below a 79 have the option of retesting. To qualify for a retest, you must turn in test corrections and stay for at least one tutoring session after school.

The requirements for corrections are:

1. State the problem number.
2. State the error or errors (algebraic, conceptual, etc.) made in your work
3. Give the complete solution with work shown and an explanation for why it is correct.

Test corrections are not the place to belittle yourself. We all make careless mistakes, even though we try to avoid them. Even if the mistake was careless, you must include an explanation. Because test corrections are meant to spot and deal with misunderstandings, corrections must also be done on a separate sheet of paper and will not be accepted if any of these elements are missing.

Attendance and Punctuality

We will cover new material nearly every day. If you miss a day, be sure to check the class Canvas page for the material. I also recommend that you schedule a tutoring session as soon as possible to cover what you missed.

Punctuality is also important for this class. A student who is not in the room when the late bell rings will be marked late. If you think you might be late, ask your previous teacher for a pass.

Communication

My primary method of contacting students outside of class is through Remind. You can download the remind app on your phone, or go to remind.com on the computer. The class code is @hawprecalc, which you can text to the number 81010. Parents, please sign up as a student.

Late Work Policy

Our class is fast-paced, and staying current with our work is a valuable life skill. For that reason, an assignment turned in late will have 20 points/20% taken off, for a maximum grade of 80 points/80% Late work turned in after 5 school days will receive a grade of 0 points. Late work is accepted for full credit after it's due **with** an **EXCUSED** absence up to 5 school days after returning to school.

Technology

In class, technology is to be used for educational/instructional purposes. For general use, students are to use a Chromebook from the cart. Phones may be used only for a specific, momentary use when I allow it (e.g. taking a picture of an example, filling out an online form) and then put away. Otherwise, they will be confiscated.

Procedures

Before Entering the classroom:

- Use the restroom and dispose of open food/drinks.
- Put away your personal electronics (including earbuds/headphones)
- Make sure you have all materials ready (including Homework).

When you *First* enter the classroom:

- Sharpen your pencil before the tardy bell
- Turn in your assignment
- Begin the warm up

During Class:

- Actively participate in class
- Follow all school/classroom rules and procedures.
- If you see me raise my hand: turn towards me, end your current conversation, and raise your own hand.

When the bell Rings to end the period

- Return all borrowed materials to the appropriate locations.
- Pick up all trash and materials from the floor and desks.
- Leave only when you are dismissed by **ME**.

COURSE AT A GLANCE:

Unit 1: Functions & Modeling

(Polynomial Division), Solving Polynomials, Transforming Functions, End Behavior, Power Functions, Rational Functions, Asymptotes, Composite Functions, Inverses of Functions, Modeling with Functions by Regression

Unit 2: Series & Limits

Arithmetic & Geometric Sequences, Arithmetic & Geometric Series, Convergence of Series, Two-Sided Limits, One-Sided Limits, Properties of Limits

Unit 3: Polynomial & Rational Functions

Polynomial Division, Solutions to Polynomials, Writing Polynomial Functions, Graphing Rational Functions, Solving Rational Equations, Solving Polynomial & Rational Inequalities, Partial Fractions

Unit 4: Exponential & Logarithmic Functions

Compound Interest, Exponential & Logarithmic Equations, Modeling with Functions, Piecewise Functions, Inverses of Functions

Unit 5-6: Trigonometry

(Triangle Trig), Transforming Sine & Cosine Functions, Law of Sines, Law of Cosines, Trig Identities

Unit 7: Conic Sections

Parabolas revisited, Focus & Directrix of a Parabola, Equations of Circles, Equations of Ellipses, Equations of Hyperbolas, Foci & Eccentricity of Conic Sections, Key Features of Conic Sections

Unit 8: Vectors

Component Vectors, Scalar (Dot) Product, Polar Coordinates, Polar Functions, Parametric Functions, Projectile Motion