

Athens High School

Course Syllabus 2022-2023

Course Name: Precalculus

Teacher: Mrs. Begley

Materials: Notebook, Graphing Calculator

Prerequisite: Algebra II Honors

*Academic performance in prerequisite classes will be taken into account as well as faculty recommendation

Course Description and Objectives

This course will introduce students to those branches of mathematics which seem to be most important in making a transition to college-level mathematics. There will be an in-depth study of functions, trigonometry, vectors and parametric equations, polar coordinates and complex numbers, exponential and logarithmic functions, sequences and series, probability, statistics and data analysis, and an introduction to calculus. Students taking this course for College Credit Plus will earn 6 college credits of mathematics through Hocking College. The course content will be aligned to the Common Core State Standards. A Texas Instruments graphing calculator is strongly recommended.

Textbook Name: *Precalculus*
Copyright 2014 McGraw-Hill Education
ISBN: 978-0-07-664183-3

Grading

Tests/Quizzes – Major 80%	100 points
Notebook – Major 80%	100 points
Homework – Minor 20%	6 points

Grading Scale: The scale in the handbooks, as adopted by the Athens City Schools Board of Education, will be used to determine letter grades

CC+ Final Grade: The final grade for students taking Precalculus for college credit will be calculated by finding the average of all four nine weeks grades. This will be the grade that will go on the college transcript. There will not be a first semester and second semester grade.

Last Day to Drop: The last day for students to drop this course without penalty for CC+ credit is **September 16, 2021**. All drop forms must be received by Hocking College no later than 5:00 PM on this day.

Classroom Rules/Policies

1. Show Respect
2. Be on time
3. Bring necessary materials
4. Do not use or have out cell phones

Keys to being successful

1. High Attendance Rate (just like college)
2. Ask Questions
3. Ask for extra help as needed (Academic Coaching, etc.)
4. Do Homework!!!

Absence

Students should make arrangements for make-up work the day they return to school. A "0" will be recorded if no arrangements are made. A student will have the same number of days to make up their work and/or tests as excused absence (example: 4 days absent- 4 days to make up work)

Review Days are a luxury. If you are not present in class during these days you are still required to take the test or quiz on the assigned date. You must get approval from me in advance to not take a test or quiz on the assigned day if you are present in class.

Testing

There is no extended time given on a test unless you have accommodations for testing that allows extended time. If you do have accommodations, I need to be made aware of those before the first test/quiz. Multiple versions of a test/quiz can be given. Make-up tests/quizzes can be different than the original version given on the assigned date. Retakes will NOT be given for any test/quiz.

Approximate list of topics to be covered

<i>First Grading Period</i>	<i>Second Grading Period</i>
<ul style="list-style-type: none">▪ Functions▪ Analyzing Graphs of Functions and Relations▪ Continuity, End Behavior, and Limits▪ Extrema and Average Rates of Change▪ Parent Functions and Transformations▪ Function Operations and Composition of Functions▪ Inverse Relations and Functions▪ Power and Radical Functions▪ Polynomial Functions▪ The Remainder and Factor Theorems▪ Zeros of Polynomial Functions▪ Rational Functions▪ Nonlinear Inequalities▪ Exponential Functions▪ Logarithmic Functions▪ Properties of Logarithms▪ Exponential and Logarithmic Equations▪ Modeling with Nonlinear Regression	<ul style="list-style-type: none">▪ Right Triangle Trigonometry▪ Degrees and Radians▪ Trigonometric Functions on the Unit Circle▪ Graphing Sine and Cosine Functions▪ Graphing Other Trigonometric Functions▪ Inverse Trigonometric Functions▪ The Law of Sines and Cosines▪ Trigonometric Identities▪ Verifying Trigonometric Identities▪ Solving Trigonometric Equations▪ Sum and Difference Identities▪ Multiple-Angle and Product-to-Sum Identities▪ Multivariable Linear Systems and Row Operations▪ Matrix Multiplication, Inverses, and Determinants▪ Solving Linear Systems Using Inverses and Cramer's Rule▪ Partial Fractions▪ Linear Optimization

<i>Third Grading Period</i>	<i>Fourth Grading Period</i>
<ul style="list-style-type: none"> ▪ Parabolas ▪ Ellipses and Circles ▪ Hyperbolas ▪ Rotations of Conic Sections ▪ Parametric Equations ▪ Introduction to Vectors ▪ Vectors in the Coordinate Plane ▪ Dot Products and Vector Projections ▪ Vectors in Three-Dimensional Space ▪ Dot and Cross Products of Vectors in Space ▪ Polar Coordinates ▪ Graphs of Polar Equations ▪ Polar and Rectangular Forms of Equations ▪ Polar Forms of Conic Sections ▪ Complex Numbers and DeMoivre's Theorem 	<ul style="list-style-type: none"> ▪ Sequences, Series, and Sigma Notation ▪ Arithmetic Sequences and Series ▪ Geometric Sequences and Series ▪ Mathematical Induction ▪ The Binomial Theorem ▪ Functions as Infinite Series ▪ Descriptive Statistics ▪ Probability Distributions ▪ The Normal Distribution ▪ The Central Limit Theorem ▪ Confidence Intervals ▪ Hypothesis Testing ▪ Correlation and Linear Regression ▪ Estimating Limits Graphically ▪ Evaluating Limits Algebraically ▪ Tangent Lines and Velocity ▪ Derivatives ▪ Area Under a Curve and Integration ▪ The Fundamental Theorem of Calculus