



Marine Science Magnet High School

130 Shennecossett Road  Groton, CT
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www.msmhs.com

MTH0145 - Precalculus Honors 2024-2025

Required Texts/Readings:

No required textbook as of now! We do follow a textbook, so copies are available for instructional support if you want. I also highly recommend Khan Academy for instructional support.

Course Description:

Honors Pre-Calculus is designed to prepare students for a rigorous college level calculus course and/or Advanced Placement Calculus offered at the high school level. Students are expected to demonstrate individual initiative, independent study, and a high level of commitment to the study of mathematics. The study of trigonometry includes right triangle and oblique triangle trigonometry, trigonometric and circular functions, graphing, identities, equations, vectors, and polar coordinates. Technology is an integral component of the course and helps to build a deeper understanding of the concepts of trigonometry and functions. In addition, technology allows the course to focus on exploration, problem solving, and multiple representations to build a deeper understanding of algebraic techniques. Preparation for SAT is embedded.

*A graphing calculator is required for this course.

Materials Needed:

3-Ring Binder, Folder, Pens/Pencils, College-ruled Composition Notebook or Loose-Leaf Paper

Classroom Attendance, Academic and Behavior Expectations

All MSMHS students are required to uphold the attendance, academic and behavioral expectations outlined in the school's Student/Parent Handbook which can be found on the MSMHS website.

Retake / Revision Policy

- All students will be allowed to retake/revise all interim and unit summative assessments (with the possible exception of ECE assessments).
- Retakes/revisions on any summative assessments must be completed within **2 weeks of when the assessment was returned to the student** or before the end of the quarter, whichever comes first.
- Students who want the opportunity to retake/revise a unit summative assessment must have completed all **scored** and **graded** assignments before taking the original summative assessment or the end of the quarter, whichever comes first. In addition, any part of a unit

summative that is done outside of class, must be complete and turned in on time in order to be eligible for a retake/revision.

- Retakes/revisions are re-evaluations of learning; therefore, students earn the new grade not an average of the two grades, regardless of whether the new grade is higher or lower than the original.

*Note: There are no retakes/revisions for Midterms or Finals. Students with IEP or 504 accommodations for extended time should work with their teacher and/or case manager to determine appropriate application of their accommodations to this policy.

Late Work

Missing graded work/formative assessments must be completed, fully and accurately, before the unit summative assessment due date or the end of the quarter, whichever comes first, in order to receive credit. Any missing work will receive a 0 in PowerSchool until it is turned in before the summative assessment. After a unit summative assessment, work cannot be made up and will remain a 0 in PowerSchool. Otherwise, there is no late work penalty.

No points will be deducted for late work leading up to the summative assessment. No points will be deducted for late summative assessments, BUT summative assessments submitted late cannot be revised, and summative assessments not submitted within two weeks of the deadline or by the end of the quarter, whichever comes first, will receive a 0.

If you do not finish an assessment during the block, you will **not** be allowed to finish it during study hall or during the next class, except in exceptional circumstances.

Extra Help:

I am available to meet with students throughout the day, before school, and after school. If you want to meet with me at any of these times, please have a conversation with me and we can figure something out! After school works better than before school, although I am not available to meet with students on Wednesdays after school due to our faculty-wide meeting.

My "off blocks" are as follows:

3B - my prep block (I will be in the library)

3A - my Learning Lounge block (I will be in U128)

1A - our math PLC block (I may be available, depending on the day)

Math support is also available in the Learning Lounge and during some Shark Blocks.

Cell Phones

Students are permitted to bring cell phones to school, however, they must be stored in the designated location in each classroom throughout the block, including study hall. Students may not bring cell phones with them when they leave the classroom for any reason. Students may also be required to turn smart watches or other devices to designated locations during class at the request of the teacher. Students found to have violated these expectations will be required to turn their cell phone into school administration. Repeated offenses may result in escalated consequences. Cell phones may not be used in restrooms for any reason. Cell phones may be used before, during lunch, or after school hours.

Grade/Grade Reporting:

Overall evaluation in a course is measured in a number of ways in the form of formative and summative assessments.

MSMHS uses the following language for communicating how assignments will be scored and represented in PowerSchool:

- “Graded” – The assignment is evaluated for accuracy (not completion), is given a numeric score, is entered in PowerSchool and is included in the quarter average.
- “Scored” – The assignment is evaluated for accuracy (not completion), is given a numeric score, may be entered into PowerSchool, but is not included in quarter average.
- “Recorded” – The assignment is marked as completed or not completed, not given a numeric score, may be entered into PowerSchool, but is not included in quarter average.

Course grades are calculated by using the following percentages:

Q1 = 20%

Q2 = 20%

Midterms = 10%

Q3 = 20%

Q4 = 20%

Finals = 10%

The following table shows the letter grades equivalent to numerical grades and GPA.

Letter	Numerical Equivalent	GPA Equivalent	Honors Weighting	AP/ECE Weighting
A+	97-100	4.3	4.52	4.73
A	93-96	4.0	4.20	4.40
A-	90-92	3.7	3.89	4.07
B+	87-89	3.3	3.47	3.63
B	83-86	3.0	3.15	3.30
B-	80-82	2.7	2.84	2.97
C+	77-79	2.3	2.42	2.53
C	73-76	2.0	2.10	2.20
C-	70-72	1.7	1.79	1.87
D+	67-69	1.3	1.37	1.43
D	63-66	1.0	1.05	1.10
D-	60-62	0.7	0.74	0.77
F	50-59	0.0	0.0	0.0

Academic Integrity:

All work submitted by students should be a true reflection of their effort and ability. If submitted work or tests are not, then the student has manifested unacceptable academic behavior.

Plagiarism

Plagiarism is defined as intentionally or unintentionally presenting another's work as your own. Any source material (electronic, written, verbal) accessed to complete an assignment must be cited. Plagiarism includes the following:

- Copying verbatim or blending source material with your own without proper attribution,

- Paraphrasing source materials or borrowing ideas, terms, or concepts without acknowledging the source,
- Inventing sources or false attributions for sources,
- Supplying/selling your work to another or purchasing/copying another's work.

Cheating

Cheating is defined as copying all or part of an assignment or assessment or allowing another to copy your work. It is also doing someone's work or having someone else do your work. Cheating includes the following:

- Using unauthorized materials, devices, or assistance of any kind to complete your work or assessment, including on-line transfers,
- Collaborating on a task without the teacher's authorization, as well as providing or receiving information so as to give/gain an unfair advantage,
- Aiding another in cheating.

Other Academic Misconduct

Other forms of serious academic misconduct include:

- Altering grades,
- Stealing or obtaining test/assessment materials or answers,
- Submitting the same (or nearly the same) work for more than one class without disclosure or approval,
- Falsifying information on school related documents and forms.

ANY behavior that can be defined as cheating/plagiarism represents a violation of mutual trust and respect essential to education at MSMHS. Students suspected of cheating should expect to be questioned by their teacher. Students violating this rule are subject to the following penalties:

- Re-do of the assignment, notification to parents/caretakers; disciplinary consequence, written summary of event and action taken given to administration.
- If a student is found to have cheated/plagiarized a second time or is involved in a particularly serious act of cheating/plagiarism, the student will be referred to administration for appropriate penalties beyond those listed above. Additional penalties include such consequences as notification to award and scholarship committees; suspension from class or school and notification to the student's prospective colleges; loss of or disqualification from honors/privileges and positions (e.g. NHS, school leadership position).

Course outline is on the next page!

Course Unit Outline - Enduring Understandings and Tentative Dates

Note: Teacher has discretion to change throughout the year.

Unit 0 – Prerequisites

September

Enduring Understandings

- Mathematical expressions and equations can be written in a variety of different ways.
- Quadratic, absolute value, and fractional equations can be solved in a variety of methods.

Unit 1 – Functions and Graphs

September/October

Enduring Understandings

- Relations and functions can be represented in a variety of ways.
- There are a set of functions, called families, in which each function is a transformation of a special function called the parent.
- Functions can be adapted to solve real world problems.

Unit 2 – Polynomial and Rational Functions

November

Enduring Understandings

- The degree of a polynomial helps describe the behavior of a graph and the number of algebraic solutions.
- A rational equation, or inequality, can describe the behavior of a graph; conversely, a graph can describe a rational equation, or inequality. Graphing utilities are used to better understand rational functions.

Unit 3 – Exponential and Logarithmic Functions

December

Enduring Understandings

- Logarithms and exponents have corresponding properties.
- You can use logarithms to solve exponential equations; and conversely, you can use exponents to solve logarithmic equations.
- Natural logarithms have similar properties to logarithms and exponents; we use base e .

Unit 4 – Circles and Triangles

January

Enduring Understandings

- The equation of a circle can be manipulated in order to identify the center and radius.
- Right triangles help to solve real-world problems.

Unit 5 – Trigonometric Functions

February/March

Enduring Understandings

- Angles are the domain elements of the trigonometric functions.
- Reference triangles allow the ability to find solutions in all quadrants.
- The graphs of sine, cosine, tangent, and their inverses are unique because they are continuous curves that repeat themselves.

Unit 6 – Analytical Trigonometry (we might skip this)

April/May

Enduring Understandings

- If you know three parts of a triangle, you can solve any triangle using the Law of Sines and/or the Law of Cosines.
- The interrelationships among the six basic trigonometric functions make it possible to write trigonometric expressions in various equivalent forms.

Unit 7 – Piecewise Functions, Limits, and Derivatives

May/June

Enduring Understandings

- Piecewise functions are function that are defined over a set of intervals.

- A derivative is a measure of how fast a function is changing
- The limit of a function is the value approached by $f(x)$ as x approaches a value or infinity.

Course Unit Outline - Unit Title and Tentative Dates:

Note: Teacher has discretion to change throughout the year.

Unit I – Writing for Success: The Common App Essay September 2023

Unit II – Racial Injustice and the Law September-November 2023

Unit III – The Native American Experience November 2023 – January 2024

Unit IV – Japanese Internment January-March 2024

Unit V – Independent Research: Marginalized Groups in America March-June 2024