Marine Science Magnet High School

130 Shennecossett Road Groton, CT
860.446.9380
www.msmhs.com

MTH0130 – Algebra II
2024-2025

Course Description:
This course will enable the student to gain a richer understanding of the algebraic structure of the real number system. While the emphasis of the course is on manipulative skills, considerable attention is given to mathematical structure and logic. The content of the course included first degree, linear, and quadratic equations and inequalities, system of equations, data interpretations, matrices, polynomial and fractional expressions, exponents, radicals, complex numbers, conic sections, and inferential statistics. Mathematical modeling, problem solving and multiple representations are stressed. Common Core State Standards are followed. Preparation for SAT is embedded.

Materials Needed:
Three Ring Binder, Tab Dividers (one for each unit of study), Folder, Pens/Pencils, Paper, Highlighters, TI-84 Calculator (or better)

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. Ater a unit summative assessment, work cannot be made up and will remain a 0 in PowerSchool.

All Math courses will abide by the following Late Work Policy: 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.

Extra Help:

Students interested in receiving extra help from teachers, or in meeting with their teacher before or after school, need to schedule a mutually agreed upon time to meet with their teacher. Teachers may require specific procedures for requesting appointments for extra help. Please know that teachers will be unable to meet with students on Wednesdays due to regularly scheduled faculty meetings.

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+ B	87-89 83-86	3.3 3.0	3.47 3.15	3.63 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).

<u>Course Unit Outline - Unit Title and Tentative Dates:</u>

Note: Teacher has discretion to change throughout the year.

Unit 0 - Foundations September ● Review of Algebra 1 content and concepts.

Unit 1 – Systems of Equations September - October *<u>Enduring Understandings</u>*

- To solve a system of equations, find a set of values that replace the variables in the equations and make each equation true.
- Systems of Inequalities can be solved by graphing. The solution is the set of all points that are solutions of each inequality in the system.

Unit 2 – Quadratics October - December *<u>Enduring Understandings</u>*

● Any quadratic function in vertex form can be converted to standard form and vice versa. In standard form, the values of a, b, and c provide key information about its graph. ● To find zeros of a quadratic function, you must set the equation equal to zero. The x-intercepts tell what the zeros are because this is where y = 0. There are many ways to solve a quadratic equation.

- A basis for the complex numbers is a number whose square is -1. Every quadratic equation has complex number solutions; some of these solutions may involve imaginary numbers,

Unit 3 – Polynomials January *<u>Enduring Understandings</u>*

- A polynomial function has distinguishing "behaviors". Its algebraic form gives information about its graph and its graph gives information about its algebraic form.
- You can divide polynomials using steps that are similar to the long division steps that you use to divide whole numbers.
- The degree of a polynomial equation tells you how many roots there are in an equation.

Unit 4 – Rational Expressions February *<u>Enduring Understandings</u>*

- Basic properties and operations with fractions must be used to simplify, multiply, divide, add and subtract rational expressions.

- When solving an equation involving rational expressions, multiplying by the common denominator can result in extraneous solutions.

Unit 5 – Radical Expressions and Rational Exponents March *Enduring Understandings*

- Corresponding to every power there is a root. If the power of the radicand is greater than the index, the expression can be simplified.
- All radicals can be multiplied and divided when either the radicand is the same or the index is the same. Only radicals with common radicand and index can be added or subtracted. ● Radical expressions are the opposite of exponents; radical expressions can be written and simplified in an equivalent form using rational exponents.
- Radical equations can be solved by isolating the radical and squaring both sides of the equation. The process may introduce extraneous solutions.

Unit 6 – Exponential and Log Equations April *Enduring Understandings*

- The exponential function $y = b^x$ is one to one, so its inverse $x = b^y$ is a function. To express "y as a function of x" for the inverse, write y = logbx.
- Logarithms can be used to solve exponential equations, and conversely, exponents can be used to solve logarithmic equations.
- The function $y = e^x$ and y = ln x are inverse functions.