

College Technical Math I

Instructor:

Ronda Beck

Room 206

ronda.beck@schools.hermon.net

207-848-4000 ext. 1206

This course focuses on mathematics topics relevant to a variety of trades and technical disciplines. Topics include: proportions, percentages, measurement, algebra, geometry, and trigonometry. An emphasis is placed on practical, contextual applications.

Graduation Standards (the number of the standard is referenced in the performance indicators listed in each unit):

Standard 1: Reason and model quantitatively, using units and number systems to solve problems.

Standard 2: Interpret, represent, create and solve algebraic expressions.

Standard 3: Interpret, analyze, construct, and solve linear, quadratic, and trigonometric functions.

Standard 5: Interpret, infer, and apply statistics and probability to analyze data and reach and justify conclusions.

Unit 1	Basic Operations, Fractions, Percents, Measurement, Signed Numbers & Powers of 10 (Chapters: 1 - 3, 4, 5)
Summary	This unit begins with a review of basic operations, fractions, and percents. Students will then compare the U.S. Customary System of Measurement to the Metric System. They will learn about accuracy, precision, and error. The unit will also focus on signed numbers and Powers of 10 and how they relate to scientific notation.
Performance Indicators Assessed in Unit	HS.M.1A - Compute with accuracy in the real number system. HS.M.1B - Reason quantitatively and uses units to solve problems.
Unit 2	Linear Equations & Inequalities, Formulas, Proportions & Variations (Chapters: 7, 8)
Summary	In this unit students develop the properties of solving equations and inequalities. They will apply the Addition, Subtraction, Multiplication, and Division properties of

	equations to solve problems. Students will also be able to use units to understand problems and define appropriate quantities with appropriate accuracy. They will use formulas, proportions, and variations to solve real-world problems.
Performance Indicators Assessed in Unit	<p>HS.M.1C - Simplifies expressions and solves equations involving complex numbers.</p> <p>HS.M.2A - Use structure and order of operations to manipulate expressions.</p> <p>HS.M.2B - Write and solve equations and inequalities in one variable.</p> <p>HS.M.2C - Represents equations or inequalities graphically.</p>
Unit 3	Linear Equations, Functions and Inequalities in Two Variables (Chapter: 9)
Summary	In this unit students will graph and solve problems involving systems of linear equations and inequalities in two variables. They will calculate the slope of a line and use the slope and other factors to determine the equation of a line.
Performance Indicators Assessed in Unit	<p>HS.M.2D - Solving Linear Equations and Inequalities graphically.</p> <p>HS.M.2F - Solves systems of linear equations and inequalities.</p> <p>HS.M.3A - Understands, graphs and applies parent functions.</p> <p>HS.M.3B - Analyzing linear functions.</p>
Unit 4	Geometry (Chapter: 17)
Summary	This unit introduces Geometry concepts. Students will use various notations to represent points, lines, line segments, rays, planes, and angles. They will use formulas to find the perimeter and area of polygons and circumference and area of circles. They will find the arc length and area of sectors. Students will also find the volume and surface area of three-dimensional objects.
Performance Indicators Assessed in Unit	<p>HS.M.4C - Use similarity of triangles in problem solving.</p> <p>HS.M.4D - Use congruence of triangles in problem solving.</p>

Unit 5	Triangles & Right-Triangle Trigonometry (Chapters: 18, 19)
Summary	In this unit students will classify triangles by the relationship of the sides or angles. They will determine if two triangles are congruent using inductive and deductive reasoning. They will study the characteristics of polygons. Students will use the Pythagorean Theorem to solve real-world problems. They will find the sine, cosine, and tangent of angles in right triangles, given the measures of at least two sides and use trigonometric values to find angle measures.
Performance Indicators Assessed in Unit	HS.M.4E - Use properties of triangles in problem solving, including trigonometry. HS.M.4G - Identify and use properties of circles. HS.M.4H - Compute perimeter, area, surface area and volume of geometric shapes.

Summative Assessments Retake

- Summative assessments will be 70% of the grade.
- Students have the opportunity to retake summative assessments.
- The student must submit a retake form to the teacher within five (5) school days of the date that the summative assessment score is reported to the student.
- The highest score a student can receive on a retake or late assessment is a 75.
- The score achieved on a retake will replace the current score (even if the score is lower).
- If a student is making up a test from an absence, that assessment will be graded up to 100.

Finals

- An end of course Final Exam will be conducted, making up 10% of the students overall grade.

Make-up Work

Upon their return to school from an absence, it is the student's responsibility to secure make-up work from their teacher. The due date of the missed work will be one additional class period for each day of absence from that class or at the discretion of the teacher.

Grading of Formative Assessments

- Formative assessments will count as 30% of the grade.
- Formative assessments may be scored on either a 0 - 100 scale or a 0 - 4 scale.
- The 0 - 4 scale will be represented in Power School as 4 = 100, 3 = 87, 2 = 77, and 1 = 67.
- The method of scoring of formative assessments will be determined by assignment.