

Freshman Center Math Department

CURRICULUM SYLLABUS

- **Tech Math** is a competency-based curriculum that emphasizes problem solving, decision-making & hands on learning.
- **Algebra A** is the first year of a two-year program designed to give the students the full experience of Algebra 1 without the fast paced single-year course. Algebra A is equivalent to the first semester of Algebra 1 while reinforcing basic math skills and concepts.
- **Algebra I** is a full year program to prepare students to continue on in the math program to Algebra II.
- **Geometry** teaches measurement and logic to students.

Tech Math

1. Solve real life application problems which involve fractions, decimals, mixed numbers, & reading ruler
2. Demonstrate proficiency in solving a variety of percent problems in application form
3. Convert units & find answers using four steps of problem solving in a variety of problems
4. Formulate plans to solve & find answers using the four steps of problem solving in a variety of problems
5. Able to use their own mental abilities to compute answers to real life problems using estimation
6. Manipulate formulas & utilize operations while solving real life problems
7. Convert both English & Metric measures to solve problems involving these measurements, some actual measuring will be involved
8. Able to translate sentences into algebraic & mathematical symbols & then use algebra to solve problems pertaining to real life situations
9. Use their knowledge of geometric elements & their properties to solve real life problems involving circles, lines and angles
10. Demonstrate proficiency in interpreting and designing different graphs for data

Algebra A

1. Simplify & evaluate mathematical expressions
2. Add & subtract polynomials
3. Solve linear inequalities & equations with one variable
4. Solve & graph linear equations & inequalities with two variables
5. Add, subtract, multiply & divide integers
6. Translate word problems into algebraic equations
7. Graph in a coordinate plane
8. Use problem-solving strategies such as organizing data, drawing a picture, looking for a pattern, working backwards
9. Organize data in forms to look for pattern and relationships
10. Use the concepts of probability & statistics through measures of central tendency, data analysis

Algebra 1

1. Simplify & evaluate mathematical expressions
2. Add, subtract, multiply & divide polynomials
3. Solve & graph linear equations with one variable
4. Solve & graph linear inequalities with one variable & systems of linear inequalities
5. Factor polynomials
6. Translate word problems into algebraic equations
7. Solve quadratic equations
8. Simplify, perform operations & solve problems containing algebraic fractions
9. Graph in the coordinate plane
10. Determine the equations of lines

Geometry

1. Identify & define geometric terms, theorems postulates, and shapes
2. Create & analyze two-column geometric proofs
3. Apply knowledge of angle types, & relationships within parallel lines & planes to justify their conclusions
4. Justify the congruence & similarity of triangles and other geometric figures
5. Categories & classify polygons based on their definition and characteristics
6. Formulate a proportion, & solve for unknown values within those proportions
7. Solve for unknown values within right triangles
8. Determine values of unknown sides with isosceles right triangles and 30-60-90 right triangles
9. Determine & utilize the area of basic polygonal shapes
11. Examine solid geometric figures in order to evaluate the surface area & volume of those shapes

& probability

11. Identify and apply basic concepts for geometric shapes
 12. Name & demonstrate the ability to use properties & identify relationships of two and three dimensional objects
11. Solve systems of linear relations & functions
 12. Simplify, add, subtract, multiply, divide, & solve problems containing radicals
 13. Use the concepts of probability & statistics through measures of central tendency, data analysis & probability
 14. Use problem solving strategies such as organizing data, drawing a picture, looking for a pattern, modeling researching & algebraic strategies
 15. Organize data in forms to look for patterns & relationships
 16. Use the properties of exponents to simplify expressions
 17. Solve multiple-step inequalities & equations including absolute value & fraction equations
12. Calculate the measures of angles within polygons in order to identify special relationships
 13. Interpret & apply knowledge of basic concepts of coordinate geometry
 14. Develop constructions based on geometric relationships using a compass and/or a straight edge
 15. Originate, analyze, & dissect basic trigonometric functions introduced in geometry
 16. Discuss, plan, & solve concepts & problems within discrete mathematics