**Bridge Sails**
**Tullahoma High School**

COURSE DESCRIPTION

Bridge Math is a course intended to build upon concepts taught in previous courses to allow students to gain a deeper knowledge of the real and complex number systems as well as the structure, use, and application of equations, expressions, and functions. Functions emphasized include linear, quadratic and polynomial. Students continue mastery of geometric concepts such as similarity, congruence, right triangles, and circles. Students use categorical and quantitative data to model real life situations and rules of probability to compute probabilities of compound events.

BRIDGE MATH STANDARDS (includes the following domains and clusters)

- The Real Number System
    - o Use properties of rational and irrational numbers.
- Quantities
    - o Reason quantitatively and use units to solve problems.
- The Complex Number System
    - o Perform arithmetic operations with complex numbers.
- Seeing Structure in Expressions
    - o Write expressions in equivalent forms to solve problems.
- Arithmetic with Polynomials and Rational Expressions
    - o Perform arithmetic operations on polynomials.
    - o Understand the relationship between zeroes and factors of polynomials.
- Creating Equations
    - o Create equations that describe numbers or relationships.
- Reasoning with Equations and Inequalities
    - o Understand solving equations as a process of reasoning and explain the reasoning.
    - o Solve equations and inequalities in one variable.
    - o Solve systems of equations.
    - o Represent and solve equations and inequalities graphically.
- Interpreting Functions
    - o Understand the concept of a function and use function notation.
    - o Interpret functions that arise in applications in terms of the context.
    - o Analyze functions using different representations
- Similarity, Right Triangles, and Trigonometry
    - o Understand similarity in terms of similarity transformations.
    - o Define trigonometric ratios and solve problems involving right triangles.
- Circles
    - o Find arc lengths and areas of sectors of circles.

- Geometric Measurement and Dimension
    - o Visualize relationships between two-dimensional and three-dimensional objects.
- Modeling with Geometry
    - o Apply geometric concepts in modeling situations.
- Interpreting Categorical and Quantitative Data
    - o Summarize, represent, and interpret data on a single count or measurement variable.
    - o Summarize, represent, and interpret data on two categorical and quantitative variables.
    - o Interpret linear models.
- Conditional probability and the Rules of Probability
    - o Use the rules of probability to compute probabilities of compound events in a uniform probability model.

The domain standards are interwoven throughout the content topics. For additional specific standards please visit the state of Tennessee website. (https://www.tn.gov/education/article/mathematics-standards)

The eight Standards for Mathematical Practice are an important component of the mathematics standards for each course. The Standards for Mathematical Practice describe the varieties of expertise, habits of minds, and productive dispositions that educators see to develop in all students.

- ❖ Make sense of problems and persevere in solving them.
- ❖ Reason abstractly and quantitatively.
- ❖ Construct viable arguments and critique the reasoning of others.
- ❖ Model with mathematics.
- ❖ Use appropriate tools strategically.
- ❖ Attend to precision.
- ❖ Look for and make use of structure.
- ❖ Look for and express regularity in repeated reasoning.

This course is a hybrid course to be completed online and in-class with the assistance of a faculty member. Tests must be completed in class with Dr. Terry monitoring student access. Violation of testing protocol may result in a loss of certification. An academic integrity form signed by student and guardian is kept on file at THS.

GRADES

Grades will awarded by the teacher according to the following guidelines and are distinguished from online minimum grade requirements. The SAILS course requirements are summarized in the table below. At a minimum students will earn a score of 77 for each module. Six modules will be averaged together to create a grade for the class. The first three modules are scored in quarter 1 or 3 and the second three modules are scored in quarter 2 or 4.

| | Assignments | Quizzes | Tests | Each Module Average |
|---|---|---|---|---|
| Online course REQ | 90% | 80% | 75% | |
| Percentage of Score | 0.10 | 0.15 | 0.75 | 1.00 |
| Min points for each module | 9 | 12 | 56 | 77 |

A pacing guide will be used for students to track progress. Students that complete the module by the date(s) below will earn a bonus 5 points to the module score. Modules must be completed in sequence. If a student gets behind early in the course, it may be difficult to catch back up to the pacing guide. Tests must be completed in class when Dr. Terry is available. It is recommended that students work to complete modules in advance of due date.

| | DUE DATE | Course Weight |
|---|---|---|
| Module 1 | 1/22/19 | 17% |
| Module 2 | 2/5/19 | 17% |
| Module 3 | 2/22/19 | 17% |
| Module 4 | 4/3/19 | 17% |
| Module 5 | 4/24/19 | 17% |
| Module 6 | 5/10/19 | 15% |

An optional Sails Plus program is available for students that work through the first six modules quickly. Students that successfully complete Sails Plus are eligible to advance through two college courses. This will be discussed in more detail with students on an individual basis.

INSTRUCTIONAL MATERIALS

Online access: https://sailstn-mlpui.openclass.com/

Calculators available in class TI30XS Multi-view (Students can purchase their own for use at home.)

A composition notebook to keep all documentation and notes for the course. (Students can keep these at school.) Students should keep an organized record of problems for reference. Additionally, it is suggested to record the lesson (eg. Lesson 1A5 or Quiz 1C). Students can then look back over any issues they were unsure of how to solve. This is particularly helpful when working through quizzes. If a student fails a quiz (score lower than 80%) then looking at the problems that were incorrect and comparing to the work product is extremely helpful in making forward progress.