Columbia High School

Course Syllabus

2020 - 2021

**I. Course:** Math Models

**II. Department:** Mathematics

**III. Instructor:** Mr. Doug Smith

**IV. Course Description:**

This course is designed for students entering the work world immediately following high school and not those who are college-bound. The course is intended to satisfy the state mandated senior math class for those students who are unable to complete Algebra 2. It has a simple overview of number theory, algebra, geometry, statistics, and personal finance (taxes, interest, saving, investing, and spending), which will help students prepare for either college or the workplace due to the focus on real-life application of mathematics. Note: Course is not NCAA approved.

To be successful, students must understand the following: 1) You cannot learn much mathematics by simply memorizing words and procedures, or by watching other people do it. You must be an active participant, and understand the presented concepts. 2) You are expected to read and use your text book as a learning resource not just a place to get your assignments. 3) You are expected to do homework every day, so set aside time for it. Do not wait until the last minute if you do not understand something. 4) If you cannot answer a question, do not give up!!! Ask the teacher, parent, or classmate, but never quit!!!

**V. Text:** Math for Your World, Second Edition, by Robert Blitzer

**VI. Course Outline:**

**Part 1 Algebra: Equations and Inequalities**

* Algebraic Expressions and Formulas
* Linear Equations in One Variable
* Applications of Linear Equations
* Modeling with Proportions
* Modeling Using Variation

**Part 2 Algebra: Graphs, Functions, Linear Functions, and Linear Systems**

* Graphing and Functions
* Linear Functions and Their Graphs
* The Point-Slope Form of the Equation of a Line
* Systems of Linear Equations in Two Variables
* Linear Inequalities in Two Variables

### Part 3 Personal Finance: Taxes and Interest

* Percent, Sales Tax, and Discounts
* Income Tax
* Simple Interest
* Compound Interest

**Part 4 Personal Finance: Saving, Investing, and Spending**

* Annuities, Methods of Savings and Investments
* Cars
* The Cost of Home Ownership
* Credit Cards

**Part 5 Measurement**

* Measuring Length; The Metric System
* Measuring Area and Volume
* Measuring Weight and Temperature

**Part 6 Counting Methods and Probability Theory**

* The Fundamental Counting Principle
* Permutations
* Combinations
* Fundamentals of Probability
* Probability with the Fundamental Counting Principle, Permutations, and Combinations
* Events Involving *Not* and *Or*; Odds
* Events Involving *And*; Conditional Probability

### Part 7 Statistics

* Sampling, Frequency Distributions, and Graphs
* Measures of Central Tendency
* Measures of Dispersion
* The Normal Distribution

**VII.** **Homework:**

Homework plays an important role in the understanding and learning of mathematics; therefore, **daily** assignments will be given. Most of these assignments will be administered through Otus and MyMathLab and done online, and many will be followed-up by some type of formative assessment. Appropriate work and communication must be shown to receive full credit. A notebook for graded class activities and warm-ups is also needed.

**VIII. Grading:**

Final grades are based upon on the mastery of learning targets or competencies for each unit of study. Assessments are designed to measure the level of mastery of the learning targets. Assessments will fall into one of four categories

1) **Formative Assessments**: These are designed to inform the students of their current level of mastery.

2) **Learning Target Quizzes**: These will assess the understanding of each learning target or competency individually

3) **Performance Tasks**: These will assess the application of concepts to various situations and may include computer projects, research projects, and investigative tasks.

4) **Summative Assessments**: These will be a cumulative assessment of the targets within each unit.

All standards will be graded on the 0 - 4 point scale below**:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | 3 | 2 | 1 | 0 |
| The student demonstrates exceptional skills and knowledge above standard. | The student demonstrates proficiency with the standard, only making minor mistakes. | The student shows emerging progress toward meeting standard, but overall lack of understanding. | The student is making minimal progress toward meeting standard. | No evidence of learning. |

Students will have the opportunity to prove understanding of the learning targets on multiple assessments, and the student’s academic grade will change as the learning progresses. Individualized remediation will be used to ensure that each student achieves mastery of each learning target.

If a student is not pleased with their performance on an exam, the student will be given the opportunity to reassess. In order to reassess the student must have no more than one missing assignment in the current unit of study, complete the review assignment, and follow the test correction policy for the given test.

Each semester you will have a semester exam that will account for 20% of your overall grade. The semester exam cannot be retaken.

**IX.** **Classroom Expectations:**

1. **It is the expectation that cell phones are put away during class time. Absolutely no cell phone is to be visible during testing**

2. Personal learning devices will be used for their intended purposes. No games, messaging, etc.

3. Follow Directions (The First Time!!!)

4. When instructor or someone else is talking, students will be listening.

5. No Food or Drink except for a water bottle.

6. Students are to be in their seats when the bell rings or they will be counted as tardy.

Tardiness will be handled according to school policy.

7.Profanity, vulgarity, or insulting language will not be tolerated

8. When given time in class to work, students will be working not socializing.

9. Come to class with all supplies.

10. Cheating and using app such as PhotoMath and Chegg will result in an automatic zero

11. In summary Be Prepared, Be Polite, Be On Time.

**Consequences:**

***Phase One*** - First Offense - Warning

***Phase Two*** - Second Offense - Time after class or school. Student/Teacher Conference

***Phase Three*** - Third Offense - Time after school or lunch detention, Student/Teacher Conference, and Parental contact.

***Phase Four*** - Administrative Intervention

**X. Extra Help:**

If you need extra help feel free to see me any time before or after school, during Wednesday’s SDL time, or make arrangements to see me during lunch. E-mail address: [dsmith@nsd131.org](mailto:dsmith@nsd131.org)

\*\*The instructor reserves the right to make any necessary changes.

**XI. Online Expectations**

**Zoom Meetings**

* This is our virtual classroom. Appropriate classroom behavior and attendance is expected
* Log into your meeting from a distraction free, quiet environment.
* Please keep your audio on mute until you want to speak.
* Make sure your video is on so we can see your happy face.
* If you would like to speak or answer a question, use the “Raise Hand feature. Then unmute yourself after you are called on
* If you would like to use the chat box, remember that it is public, and a record of the chat is kept and archived
* Have paper and pencil handy to take notes

**Office Hours:** 2:45 – 3:30 – This will be the best time to contact me with questions. I will answer as soon as possible. Do not expect replies during off-school times.