**Discrete Mathematics**

**Contact Information**

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Room E116

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**Introduction**

This class introduces discrete mathematics as a rigorous area of study. Students will explore topics related to discrete mathematics, from both a theory- and an application-oriented perspective. Connections to topics in Computer Science, such as applied cryptography and the binary number system, will be emphasized. Topics include: Sets and Number Systems, Counting, Groups, Sequences, Symbolic Logic, Boolean Operators, and Graphs. Students will be graded based on course participation, unit exams, and projects. Basic algebra skills are recommended as a prerequisite for this course.

**Course Outline**

1. Introduction and Preassessment
2. Symbolic Logic
3. Sets and Number Systems
4. Functions and Sequences
5. Combinatorics
6. Group Theory
7. Graph Theory
8. Cryptography
9. Boolean Algebra
10. Taxicab Geometry
11. Cumulative Project
12. Course Review and Postassessment

**Grading**

Projects: 50%

Unit Exams: 30%

Participation: 20%

**Student Conduct Expectations**

Students are to act in a manner that allows for the creation and maintenance of a positive classroom environment. Students are expected to model good behavior that will allow them to excel in life upon graduation. Upperclassmen are expected to demonstrate good behavior to lowerclassmen. Students are expected to come to class prepared for the day and ready to learn.

**Classroom Rules**

1. Non-emergency phone use only permitted during student work sessions.

2. No music without earbuds or headphones, and only during student work sessions.

3. No talking during lecture or exams, unless asking for clarification.

4. Be on time.

5. No excessive or frequent bathroom breaks without a valid reason.

6. No passes to other classes without a valid reason.

7. No bringing friends to class, or letting into the classroom students not in the class.

8. No profanity or slurs.

9. No sleeping or laying on the floor.

10. No hoods or ski-masks in the classroom.

11. No touching classroom materials without permission.

**Violations**

Class rule violations follow a strike system:

1st violation: verbal warning.

2nd violation: verbal warning and parent / guardian contact.

3rd violation: 15-minute afterschool detention, served in classroom.

Subsequent violations will be handled accordingly.