

# MMA

## Course Syllabus

Teacher: Mr. M.I. Ramirez  
Conference Period: 3<sup>rd</sup> Block  
Email: [miramirez@sharylandisd.org](mailto:miramirez@sharylandisd.org)

Room: 419  
Tutorials: Mon., Wed., Thurs, after school by appointment  
Tues. and Fri. 4:15 4:45

### MMA COURSE DESCRIPTION

Mathematical Models with Applications is a course for high school students with a minimum prerequisite of Algebra I. This course is intended to reinforce, broaden, and extend the mathematical knowledge and skills acquired in algebra. This course is not intended to be a low-level course. To the contrary, the mathematical content of this course should be appropriate for a college-bound curriculum. The course should build on the mathematical background of the students yet stretch their knowledge toward topics studied in Geometry and Algebra II.

The primary purpose of this course is to use mathematics as a tool to model real-world phenomena in science, finance, music, and art. Science should include not only the biological and physical sciences, but the social sciences as well. Finance should include growth models (e.g., situations involving simple and compound interest rates), saving-up models (e.g., investments, insurance, and retirement plans) and paying-off models (e.g., automobile loans and house loans). Patterns and functions can be used to model musical pitches and scales while geometric transformations can be used to describe such musical concepts as transposition, inversion, and retrograde. Geometric transformations can also be used to model perspective drawings, frieze patterns, quilting patterns, and tessellations, while inversions can be used to model anamorphic art drawings. Through these various situations, prior mathematical knowledge will be expanded and new mathematical knowledge will be developed.

In developing these models students might gather data using something as simple as a meter stick or as sophisticated as an electronic data-collection device with a microphone. Students are expected to have access to various types of technology including graphics calculators, data-collection devices, spreadsheets, dynamic geometry programs, and the Internet as tools for collecting, displaying, and interpreting information. The classroom environment should be student centered and activity orientated. The teacher should serve as a facilitator and guide for the students, not merely a disseminator of information. Students should be allowed to use a variety of problem solving strategies and approaches to problems. Through the use of the various applications and interesting problem settings it is hoped that the students will be motivated to continue their study of mathematics in future courses.

### COURSE MATERIALS

#### **To be prepared for class each day you must bring...**

1. Notebook paper & graph paper, pencil, and eraser.
2. 1" Binder with dividers
3. \_\_\_\_\_
4. Optional: Scientific calculator (TI 83Plus or TI 84 if possible) and ruler. Calculators will be available for classroom use.
5. Project supplies may also be required at a later time, but will be given out at least 3 weeks prior to project beginning.

### COURSE POLICIES AND PROCEDURES

#### **Classroom Rules:**

1. Be Positive
2. Be Prepared
3. Be Respectful
4. Be on time

**Classroom Procedures**

- Phones must turned in as the students are walking into the classroom
- You must be in your seat when the bell rings or you are considered tardy.
- You should follow the Student Code of Conduct at all times.
- There will be no hall pass issued while lesson is in progress.
- Teacher dismisses the class, not the bell.

**GRADING POLICY**

**Major Assessments** (Tests/Projects): 60%

**Minor Assessments** (Homework/Class Work/Participation/Quizzes/Computer Lab): 40%

**Missed work/Tests Policy** – Assignments/quizzes/tests missed due to an **excused absence** must be made up. The deadline for missed work is equal to the number of days missed (up to 3 days). It is the student’s responsibility to complete all make up work/tests.

**Late Work Policy** – Assignments not turned in on time are subject to a progressive grade penalty of 10 pts. per day (up to 3 days). After the 3<sup>rd</sup> day late work will not be accepted.

**Retest Policy** –to take a retest you must attend at least one tutorial session and retest must be taken within 3 school days. The maximum retest grade is a 70.

**To the parents:**

Please read through this syllabus and review it with your child. If you have any questions or concerns please let me know.

You may contact me at school **580-5300 ext. 1360**. You may also send a note by your child or email me at [miramirez@sharylandisd.org](mailto:miramirez@sharylandisd.org). If we need to meet, my planning period is 1<sup>st</sup> Block, 8:00 – 9:30 AM. I am also available before or after school by appointment.

(Please sign below and return it tomorrow, students/parents should keep this syllabus for future reference).

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**We have read and reviewed the syllabus.**

Student Name \_\_\_\_\_ ID# \_\_\_\_\_

Student Signature/date \_\_\_\_\_

Parent Signature/date \_\_\_\_\_

Parent Phone Number \_\_\_\_\_

Parent Email \_\_\_\_\_