

## **COURSE SYLLABUS: Advanced Math I**

### **Logistics**

Instructor: Margaret McMullen

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Location: Room 242

### **Course Overview**

Advanced Mathematics, college algebra course. It is intended for use by students who have completed two years of high school algebra and one year of high school geometry. It is also written for average and above average students who would like to prepare for college mathematics. Chapters 1-5 are devoted to topics from advanced algebra.

2<sup>nd</sup> semester Advanced Math, precalculus course. The focus of Chapters 7 through 10 is trigonometry and its applications. The remaining chapters are independent chapters that may be studied in any order. They present conic sections (Ch.6), vectors and determinants, matrices, sequences and series, statistics, probability, and introductory calculus. Besides the usual mathematical topics, the text presents many interesting applications of mathematics to physics, astronomy, economics, biology, and other fields. Completion of this course will result in 7 semester credits. (3 college algebra and 4 pre-calculus credits through UMC)

### **Units of Instruction**

1<sup>st</sup> semester College Algebra:

- Algebra Review: Operations on real numbers, exponents, radicals, polynomials, factoring, rational expressions
- Equations and Inequalities: Solving linear and quadratic equations, applications
- Functions and Graphs: Graphing techniques, operations on functions; linear, quadratic, and inverse functions; variation
- Polynomial and Rational Functions: Roots, factors, graphing.
- Exponential and Logarithmic Functions: Graphs, properties, solving equations, applications
- Systems of Equations: Solving systems; applications

2<sup>nd</sup> semester PreCalc:

- Trig Functions- angles, arcs, sectors
- Trig equations and applications: Sine and Cos applications, solving trig equations
- Triangle Trigonometry: Law of Sines, Law of Cosines
- Trig addition formulas
- Sequences and series
- Matrices
- Conics- parabolas, ellipses, hyperbolas

## **Methodology**

Advanced Math students will be instructed in a variety of methods, including, but not limited to:

- Lecture
- Class discussion
- Group work
- Individual work

Every effort will be made to demonstrate the relevance of the material covered in this course. The topics have been chosen carefully to cover the challenges that may face students in their pre-high school years.

## **Evaluation Criteria**

Students will have a variety of methods to display master of the subject area and to show their effort and overall contributions to the class. The following are the criteria used to evaluate students.

- 5% - Class participation
  - Cooperation in class with staff and peers
  - Involvement in discussions
  - Active role in all class activities
  - Being prepared for class
  - Adherence to all class policies as explained in the student contract
- 50 % - Test scores
- 45% - Graded class assignments
  - Homework
  - All other work designated as an assignment by the teacher

## **Materials**

- Notebook (all students will have a notebook with them every day when class begins. This notebook must be for taking notes, assignments, group work, or to store information that is distributed to the class. A student who does not have their notebook with them is not prepared for class, and this will be reflected in their participation grade.)
- Pencil- all math homework must be done in pencil!
- Course book
- Calculator- will be assigned to students and expected to bring to class each day

## **Resources**

- Various handouts
- Notes
- Online book
- IXL

## **CONTRACT: Advanced Math I**

**Please review the course syllabus with your parent or guardian. Review the following notes below, and then sign the document. The contract is due one day after it is assigned.**

### Classroom Expectations

1. Be in your seat when the bell rings. Seating charts will be used.
2. Visit quietly while attendance is being taken.
3. You **must** take notes!
4. You must turn in your homework on time. Late work will not be given full credit.
5. Come prepared to class each day. This includes your book, notebook, homework, calculator and a **pencil!!**
6. Participate in class.
7. Use appropriate language.
8. You will be given a pass each quarter to use for locker, bathroom, etc. No pass, don't ask.
9. Cell phones will be turned into the basket on my desk at the beginning of the hour. If they are found later they will be taken to the office until the end of the day.
10. If you are absent it is your responsibility to find out what you missed. Absence for a school activity should be notified to the teacher ahead of time and assignments are still due the same day as the rest of the class.

*We have read the Advanced Math Student Contract and Syllabus, and understand all the rules of this class.*

STUDENT'S NAME (PRINTED): \_\_\_\_\_

STUDENT'S SIGNATURE: \_\_\_\_\_

PARENT'S NAME (PRINTED): \_\_\_\_\_

PARENT'S SIGNATURE: \_\_\_\_\_

PARENT CONTACT INFORMATION (OPTIONAL): \_\_\_\_\_

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