

## **MATHEMATICS DEPARTMENT – UPPER SCHOOL**

### **PHILOSOPHY**

The Mathematics Department of Saddlebrook Preparatory School believes that mathematics is a logical foundation system with a special language and definite results which is used in almost all subject areas. Thus it is the goal of Saddlebrook Preparatory School to thoroughly prepare students in all subject areas of mathematics to meet the challenges of college curriculum.

### **OBJECTIVES**

The following are the basis for the instructional activities used by the Mathematics Department at Saddlebrook Preparatory School:

1. It is a goal of mathematics instruction to develop students' ability to reason intelligently with quantitative information.
2. Develop technical expertise within mathematics by using appropriate technology as a tool to solve problems.
3. Experiences with geometric quantities, arithmetic quantities, and variables are important in the understanding of measurement to include both standard and metric systems.
4. A grasp of geometry and spatial sense is also an essential part of the mathematics curriculum.
5. Develop understanding and appreciation for the relationship of mathematics to other fields.
6. Algebraic thinking is developed through an understanding of concepts associated with functions, patterns, and relationships and then applying them to solve meaningful problems.
7. To help students to be able to collect, organize, describe and interpret data, as well as make decisions and predictions on the basis of that information.
8. Provide modified instruction for non-native speakers of English

### **COURSE OFFERINGS**

#### **Upper School (Grades 9 – 12)**

Algebra I

Algebra I Honors

Geometry

- Geometry Honors
- Algebra II
- Algebra II Honors
- Pre-Calculus Honors

- Calculus Honors

## **STRENGTHS**

The staff is highly accessible to students for individual help, both in class and after school.

Students are exposed to different methods of solving problems such as using pencil and paper as well as Scientific and Graphing calculators.

The math faculty is exceptionally well qualified.

## **RECOMMENDATIONS**

Consider the acquisition and integration of additional mathematics modeling and technology-based instructional aids and supporting materials such as:

1. Maple 9. Maplesoft - mathematical problem-solving, exploration, data visualization, and technical authoring
2. Questia – internet-based library with access to vast amount of information in arithmetic, geometry, algebra, and calculus needed in order to better serve our student body at Saddlebrook Prep
3. Upgrade basic modeling tools for labs as appropriate with textbook program
4. Standardize on Graphing Calculators as required tool – our math texts have many activities requiring one
5. Complimentary Internet resources – most math text publishers have websites that support their program with additional examples and homework support
6. Microsoft Excel – a very useful tool for simple number crunching and analysis and graphing.
7. Coordinate Graph/Grid Dry Erase Boards
8. Additional Mathematics Classroom Posters showing line and quadratic functions and graphs

Consider Additional Mathematics SAT Preparation - it is recommended that special group tutorial/workshop sessions during evening study hall time for the mathematics portion of the SAT be conducted twice each quarter for all interested students.