



**SAINT GEORGE  
SCHOOL**  
FOUNDED 1965



Porfirio Herrera No. 6, Ensanche Piantini.  
Santo Domingo, D. N. Rep. Dominicana

T. 809 562 5262 F. 809 562 5015  
[www.stgeorge.edu.do](http://www.stgeorge.edu.do)

## **Precalculus - 5<sup>th</sup> Form (11<sup>th</sup> Grade)**

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Academic year: 2011-2012

### **1. INTRODUCTION AND DESCRIPTION OF COURSE**

The major goals of this course will be to build new mathematical knowledge through problem solving that involves a variety of strategies. To master the language of mathematics by expressing ideas precisely using the correct mathematical language (notation), to be able to use graphing calculators, and computer programs to analyze, solve, visualize, and interpret mathematical concepts.

In this course we will cover a great variety of topics that are widely used in modeling real world situations. We will be covering topics such as functions, introduction and evaluation of trigonometric functions, trigonometric identities, exponential and logarithmic functions, sequences, and an introduction to calculus.

### **2. SKILLS**

Graph, analyze, transform, combine, and solve functions, and their inverses. Solve real world problems using the concept of functions.

Understand:

- Rational, quadratic, and polynomial functions and models. Understand the Fundamental Theorem of Algebra.
- Exponential and logarithmic functions, and the exponential and logarithmic functions to model real world situations.
- The relationship between the unit circle and the trigonometric functions.
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Be able to:

- Prove trigonometric identities, and use the identities to solve trigonometric equations.
- To graph trigonometric functions and their inverses.

- Apply the right triangle trigonometry, Law of Sines and Cosines, to solve real world problems.
- Use the concept of arithmetic and geometric sequences, for real life problems.
- Apply the Limit concept to real life conditions.

### **3. CONTENT**

- Function
- Polynomial and Rational functions
- Exponential and logarithmic functions
- Trigonometric functions: Unit circle approach
- Trigonometric function: Right triangle approach
- Analytic trigonometry
- Sequences and series
- Limits: A preview of calculus

### **4. TEXTBOOKS AND OTHER RESOURCES**

Core texts:

Precalculus

Mathematics for calculus

James Stewart , Lothar Redlin, Saleem Watson

Sixth Edition

Other resources

<http://www.khanacademy.org/>

<http://www.brightstorm.com/math/>

\* These core texts do not make up the entirety of the printed resources to be used in the course. Other resources will include throughout the course.

\*Students are expected to have the following material for class:

Ti-84 plus, Ti-84 plus silver edition (required)

### **5. TEACHING STRATEGIES**

Students will benefit from a wide range of teaching approaches, where we will be emphasizing critical thinking, cooperative and collaborative learning and an inquiry method of instruction. Using critical thinking problems we are able to collect a series of mental activities that will develop in the students' abilities to correctly approach problem solving situations. As students



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work in small groups, it will prepare them for group working environments, developing their planning and encourages students to build research skills that can be used throughout their educational experiences.

## **6. EVALUATIONS**

The students will receive a rubric (grid that lists criteria) explaining precisely how they will be evaluated for ALL assignments.

- Participation and work habits (10%)
- Homework (10%)
- Quizzes (20%)
- Class Work (20%) (Mini quizzes, performance tasks, formative tests)
- Tests and Group Projects (40%) (Test and major projects)

## **7. OTHER REMARKS REGARDING OUR CLASS:**

Be on time for class. Unexcused tardiness is not permitted.

Students must always be polite and respectful towards the teacher and peers. Do not make sarcastic, demeaning, or hurtful comments in or out of class. Offer constructive criticism in a respectful manner.

Expect homework on a daily basis.

Enrichment classes will be available after school and during lunch time when necessary.

It is student's responsibility to make up work after an absence. This includes reschedule quizzes, assignments due dates, and enrichment classes.

There will be minor assessments on a weekly basis and major assessments on a bi-weekly basis.