



# AP PreCalculus Course Syllabus

Thurgood Marshall High School

## Course Details

This course is designed to prepare you for college level work. You may or may not take Calculus once you complete this course; however, statistics show you will be more successful in college as a result of taking an AP course. You will be challenged with your critical thinking skills, application of concepts, an ability to transfer knowledge from one topic to the next.

## Course Overview

### First Semester

Change in Tandem and Rates of Change  
Polynomial Functions  
Rational Functions  
Exponential Functions  
Logarithmic Functions

### Second Semester

Periodic Functions  
Trigonometric Functions  
Polar Functions  
Parametric Functions

## Course Objectives

Critical Thinking Skills – The ability to take a new task, or new concept, turn it over mentally, work with it, and eventually incorporate it into existing schema, or else create new schema around it. This means often, I will not directly answer a question you ask regarding a math problem. Instead, I will direct you where information can be found, encourage a new line of thinking, or perhaps smile and say nothing at all! This does NOT mean I do not care about you and your abilities; it means exactly the opposite. The BEST teachers are the ones who eventually render themselves unneeded. This cannot be done if the teacher is relied on every time you get stuck. Critical thinking is a skill that diffuses itself across all aspects of life, both personal and professional, but like all skills, it must be practiced in order to be perfected. You will have MANY opportunities to perfect this practice in this classroom, and I would be remiss if I took those opportunities away from you by doing the thinking for you (especially when you might be stuck).

Interpersonal Skills – Education, and learning in general, are largely still social exercises. To do this, and to do this well, you must be able to communicate effectively with your peers. You will be working in groups in this class, and often, these groups will be random. It is important to me that you are building these communication skills (listening, disagreeing agreeably, being aware of your 'air-time', inclusive statements) so you can connect to others in a mutually productive way.

Growth Mindset – Math, more than any other subject, seems to elicit strong emotions when discussed. In this classroom, failure is not final and EVERYTHING is in the process of becoming. Your grade is NOT a reflection of who you are, nor a label as to your abilities as a math student in general. It is simply feedback as to your level of proficiency with that particular content strand. As long as you try, take advice/feedback to improve your work, reflect on your understanding and reach out when you are stuck, you will improve! With the retake policy outlined by the district, no test grade should be looked at as final, because learning is never final, but rather an on-going process of discovering - and then rooting out - our own insecurities, perceptions and preconceived knowledge or beliefs!

## AP Practices

### Procedural and Symbolic Fluency

- Solve equations and inequalities represented analytically, with and without technology.
- Express functions, equations, or expressions in analytically equivalent forms that are useful in a given mathematical or applied context.
- Construct new functions, using transformations, compositions, inverses, or regressions, that may be useful in modeling contexts, criteria, or data, with and without technology.

### Multiple Representations

- Identify information from graphical, numerical, analytical, and verbal representations to answer a question or construct a model, with and without technology.
- Construct equivalent graphical, numerical, analytical, and verbal representations of functions that are useful in a given mathematical or applied context, with and without technology.

### Communication and Reasoning

- Describe the characteristics of a function with varying levels of precision, depending on the function representation and available mathematical tools.
- Apply numerical results in a given mathematical or applied context.
- Support conclusions or choices with a logical rationale or appropriate data.

## Evaluation

Daily grades will be completed in class - homework and AP Classroom is for practice, to deepen their understanding, and to know where they are in the learning process.

The weekly assignment overview in Schoology will be your best ally for remembering when assessments are given in class. So, check Schoology daily!

Major grades - Most major grades will be tests, but we will also have projects so that you can show what you know in more creative ways.

In order to retest a major grade, you must attend at least one scheduled tutorial session.

## Course Policies

1. Follow the respect agreement.
2. Be an active participant in the learning experience.
3. Be open to new ideas.
4. Be okay making mistakes.
5. Stay on top of your workload.

## Required Books and References

- PreCalculus Textbook
- Schoology
- Laptop or Tablet
- AP Classroom
- TI Nspire Calculator

## Teacher Contact Information

Email: [terrance.stills@fortbenisd.com](mailto:terrance.stills@fortbenisd.com)

Phone: (281) 634-8611

Note: Emails, Schoology messages, and phone calls received after 4:30 PM will, most likely, be responded to during the next business day.