

# New Paltz Central High School

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## *Welcome to Introduction to Calculus*

In this course, we will begin with precalculus concepts and then move into learning calculus! Where possible, topics in this course are introduced graphically, numerically, analytically, and verbally. The intent is to move beyond algebraic and symbolic aspects of calculus and give meaning and understanding through applications. Be prepared to work on problems that you may not know how to approach; that's what mathematics is all about! And be prepared to explain your thinking verbally and in writing.

Homework is assigned regularly and may take the form of a problem set or a video or a Desmos activity. The idea of the video lessons as homework is to allow us more class time for group work and for deeper and more complex problem solving projects.

The goal is to build mathematical reasoning, communication skills, conceptual understanding, procedural fluency, and to help us all appreciate and enjoy mathematics. This approach is directly aligned with the Common Core Learning Standards (Mathematics: Standards for Mathematical Practice).

### **Course Topics:**

- Functions and Average Rates of Change
- Linear Functions, Power Functions, Polynomial Functions, Rational Functions
- Conic Sections
- Exponential and Logarithmic Functions
- Trigonometric Functions
- Parametric and Polar Functions
- Limits and Their Properties
- The Derivative
- Basic Differentiation Rules and Rates of Change
- Implicit Differentiation
- Applications of Differentiation

### **Grading**

#### **Daily Check: 5 points**

A short daily quiz ("daily check") will be given at the beginning of most classes. The daily check will be based on the homework and/or material from the previous class. Each quarter, two to four of your lowest daily check grades will be dropped. **If you miss a daily check due to an absence, you may make up the daily check as long as you make it up before the next class. If not, a missed daily check will count towards one of the dropped daily checks.**

**Homework** will be given on a daily basis. If the homework is a video lesson, take notes and come to class prepared to take a daily check on the content. If the homework is a problem set, solutions and/or answers will be posted on line. You are expected to do the homework, as needed, and check the solutions as you work. If you get stuck on a problem, work through the solution to see if you can figure it out that way. If you have questions on homework problems, come work with me after school or during the day before class or email me and I will help you. As a rule, we will not be “going over” homework in class.

### **Class Work and Problem Sets: 2 to 10 points**

Some of the problems and activities that we do during class will be collected and graded. Problem sets may be assigned as homework and collected and graded. All problem sets turned in on time may be corrected for full credit.

### **Quizzes and Tests: 20 to 50 points**

There are usually 4 or 5 quizzes/tests per quarter. If you miss a test due to an absence, you will be expected to take the test the class you return. We generally do not cover any new material the class before a test, so if you miss the class before a test, you will be expected to take the test with the class. Use the materials on Google Classroom to work on practice materials and sample tests.

### **Your Grade**

Your quarter average can be determined at any time by adding up the number of points earned and dividing it by the total number of possible points.

### **Calculators**

Please note that students will NOT be using any calculator this course! (You’re going to be freed from the bonds of calculator dependence!!!)

### **Other Important Info**

#### **Missing Class:**

**If you miss class, you are expected to look on our Google Classroom to see what work you missed.** You are also encouraged to come find me before the next class, either after school or during the day, to learn any new material we covered and to be prepared for the next daily quiz. Remember: If you plan to make up a missed daily check, you need to make it up **before** the next class.

#### **After-School Help:**

Please come after school anytime if you have questions or need help on anything. You can find me in the math office (room 214A) or in room 137 after school every day. I am often here until the cows come home, so drop by anytime. You may also reach me through e-mail at [kstewart@newpaltz.k12.ny.us](mailto:kstewart@newpaltz.k12.ny.us).

#### **Google Classroom:**

I will post all assignments, solutions to homework questions, video lessons, and announce upcoming tests and projects on our Google Classroom page, so check that regularly. In addition, I post test reviews with complete solutions and extra practice problems that can help you at home.

***Let’s work together to make this a productive and safe year for all of us!***