

# Principles of Calculus Syllabus

Instructor	Mr. Jeremy Singer	Phone	202-282-0120
Classroom	416A	E-mail	Jeremy.singer@dc.gov
Office Hours	W at STEP, Thurs. 3:30-4:30 (or by appointment)		

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## Course Description (Overview):

This math course builds on students' experience with functions and introduces the basic concepts and skills of calculus. Students will investigate and apply the properties of polynomial, exponential, and logarithmic functions; broaden their understanding of the mathematics associated with the rate of change, and develop facility with the concepts and skills of differential calculus as applied to polynomial, rational, exponential and logarithmic functions

## Course Objectives:

1. Reinforce the algebraic principles necessary for success in Calculus
2. Introduce the concepts of the derivative, definite integral, and limits with algebraic application
3. Discuss until the students are sick of hearing it the relationship between derivative and rate of change
4. Use the various methods of finding slope to learn multiple representations of derivatives.
5. Learn multiple methods of finding derivatives of various types of functions

## Textbook:

Forester, 1<sup>st</sup> ed, Calculus,

[http://www.alnasiry.net/Kpdf/Calculus-Concepts\\_and\\_Applications-Foerster.pdf](http://www.alnasiry.net/Kpdf/Calculus-Concepts_and_Applications-Foerster.pdf)

## Resources and Supplies:

Notebook with capacity to hold multiple handouts, pencil or pen, TI-84 graphing calculator or equivalent. (Note: I highly recommend a notebook for this course. Having all of the Information in one place as you practice is important to success in this class.)

## Grading Policy:

All courses must follow the official DCPS grading scale.

- **10% Participation**- warm-ups, exit tickets etc...
- **50% Student Work**- Projects, Papers, Labs
- **40% Assessments**- Tests, Quizzes, etc.

CANVAS: All work except for tests and exit tickets will be collected on Canvas

Canvas Log-In Information:

Website: <https://dcps.instructure.com>

Username: Your Student ID#

Password: 6-digit birthdate (You may have changed this previously)

Homework and Classwork will occasionally be completed using online items such as Google Forms other platforms. In addition, I will often collect work that must be submitted as a PDF or JPEG file. PLEASE NOTE THAT I CANNOT READ HEIC FILES (Apple Airdrop is the usual source of HEIC files). I cannot read them on Windows, so you will need to convert them to PDFs. I will help with that if necessary.

Units	Approximate Time
P	4 weeks (Review of Basics needed for Calculus)
1	4 weeks: Definition of Integral and Derivative
2	5 weeks: Limits, Continuity and Limits involving infinity
3	4 weeks: Difference Quotient and the Derivative of Functions Graphically
4	2 Week: Application of the Derivative part 1
5	2 Week: Derivative of the Sine and Cosine functions
6	6 weeks: Rules of differentiation (chain, power, product, quotient)
7	2 week: Applications of the derivative Part 2
8	6 Weeks: Reimann Sums and the Fundamental Theorem of Calculus