

Calculus I, Fall 2021

Queens College, Math 141

Prof. Christopher Hanusa

<http://qcpages.qc.cuny.edu/~chanusa/courses/141/21/>

# What is calculus?

Calculus is the study of how things change.

In Math 141 (Differential Calculus)

1. How to find the **instantaneous** change of various functions.
2. Use derivatives to solve various kinds of problems. (**Optimization!**)
3. Important concepts: Limits, Continuity, Tangents, Sketching

Then in Math 142 (Integral Calculus):

1. Go back! Learn methods to integrate various functions.
2. Key ideas: Areas, Volumes

Why calculus?

- ▶ A challenge to conquer!
- ▶ Learn how to think critically about mathematics.
  - ▶ Discuss and have conversations about mathematical concepts.
  - ▶ Explain in writing, using complete sentences and paragraphs.

## We're back in person! How does that work?!?

(Do a little dance.) (Breathe.)

### **Following CUNY & QC Safety Guidelines**

- ▶ Everyone wears masks on campus, indoors and outdoors.
- ▶ Everyone is vaccinated  
(or is being tested every week and must maintain distance)
- ▶ You uploaded your vaxx info to CUNYFirst and it's verified.

### **Accessing campus** (QC link)

- ▶ Four entrances to campus.
- ▶ At the entrance you tap your QCard. (Cross verified with info)
- ▶ Class is in Powdermaker Hall Room 113.
- ▶ Use the library to study or for online classes before or after.  
(You also need to use your QCard to access the Library)

### **We will appeal to Flexibility and Humanity.**

- ▶ Don't come to class if you're sick!

## The book and homework:

**Our Book:** Essential Calculus (2nd Edition)

Link: <https://www.cengage.com/c/essential-calculus-2e-stewart/>

It is **not required** to buy the book from this link.

If you do (or already did), you will have access to WebAssign, which has extra online resources & problems that many find helpful.

▶ <http://www.webassign.net/>      Class Key: qc 0268 8238.

**Our Homework:** WebWork (FREE!)

- ▶ On [webwork.qc.cuny.edu](http://webwork.qc.cuny.edu) find [21-9\\_Math141\\_18\\_Hanusa](#).
- ▶ Login w/your QC CAMS account information.  
(Your username must be **lower case**, like `jsmith100`.)
- ▶ Homework expectations are posted on course webpage.
- ▶ First homework (w/Webwork Orientation) due Monday!

# Your Grade

**Philosophical Question:** What does a grade represent?

**My philosophy:** It should represent how well you know the material.

**Other classes:** Points on midterms and final exam. Average the grades.

**Problem:** High stakes! Does your grade represent what you know?

**This class:** Grade is based on how well you know 20-25 **course standards**.

Throughout the semester we will assess your knowledge:

- ▶ **Group explanations** of content learned in class.
- ▶ **In-class assessments** of new standards. (Every 1–2 weeks)
- ▶ **Reassessments** to improve your scores. (Two per week.)

**Key idea:** Your grade is linked to your **understanding**.

You have **multiple opportunities** to show that you understand.

## A normal day in this class

Outside class

- ▶ Preparing for class
  - ▶ Complete homework, Prepare questions, Read sections for the day.

In class

- ▶ Arrive on time & Be ready to participate!
- ▶ Get into groups at individual stations, work on thought exercises.
- ▶ Discussion, recap, synthesizing, note taking.
  - ▶ My philosophy: More the why than the how
  - ▶ Key concepts
  - ▶ Some examples
  - ▶ Take notes! (Bring paper, pen(cil), colors)
- ▶ Debrief.

Outside class

- ▶ Learning after class
  - ▶ Review notes, Work through book details, Complete homework

## To do well in this class:

- ▶ **Form good study groups.**
  - ▶ Discuss homework and classwork. Study for exams.
  - ▶ Bounce around ideas, topics, questions.
  - ▶ You will depend on this group.
- ▶ **Put in the time.**
  - ▶ Three credits = (at least) nine hours / week out of class.
  - ▶ Homework stresses key concepts from class; learning takes time.
- ▶ **Come to class prepared.**
  - ▶ **Review** previous day's sections, notes.
  - ▶ **Do** the homework & prepare questions.
  - ▶ **Preview** the new day's sections.
- ▶ **Stay in contact.**
  - ▶ If you are confused, ask questions (in class and out).
  - ▶ Don't fall behind in coursework or homework.
  - ▶ I need to understand your concerns.

## Creating a community

It's important to get to know each other.

- ▶ Jamboard? Jamboard! A collaborative whiteboard.