

**Mr. Collins:**

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# Evacuation route



**Structure of the Course** This course will re-teach everything you learned in AP Calculus AB and add in some additional new topics. We re-teach all of AP Calculus AB in first semester (but 3x faster) with a few new things added in, then learn two new, more complex units in 3rd quarter, and prep for the AP Exam for the entire 4th quarter.

- Unit 1: Limits and Continuity
- Unit 2: Evaluating Derivatives
- Unit 3: Derivative Applications: curve sketching, optimization, physics, related rates
- Unit 4 part 1: Antiderivatives, Riemann Sums, Fundamental Theorem of Calculus

*First quarter will all be things that you've seen before - faster pace*

----- Fall Break -----

- Unit 4 part 2: Advanced techniques for evaluating integrals
- Unit 5: Integral Applications: Area/Volume, Arc Length, Surface Area, Average Value
- Unit 6: Differential Equations, the Logistic Growth Model
- Semester 1 Final exam review

*Second quarter will start adding in new topics, but building off of things you learned last year*

----- Winter Break -----

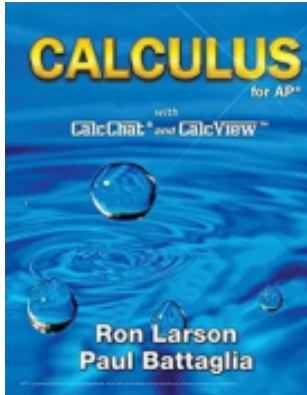
- Unit 7: Infinite Series and Taylor Polynomials
- Unit 8: Parametric Equations, Polar Coordinates, Vectors

*Third quarter will be about two completely new topics (complex but interesting!)*

----- Spring Break -----

- Thorough review of the entire course and preparation for the AP Calculus BC exam and final exam.

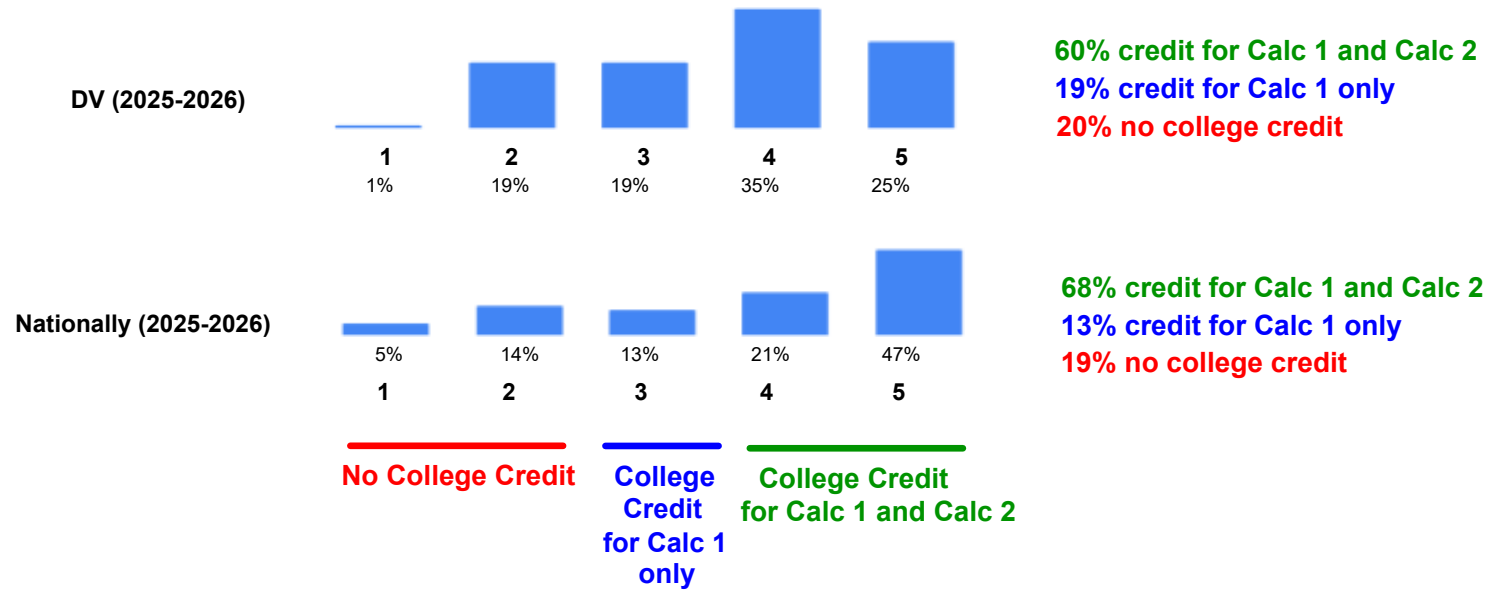
## Our Textbook



I teach this course from my own notes (which you'll have links to ahead of time so you can print them if you wish), and we use packets for homework, so it isn't required that you get a textbook.

But if you are the kind of student who wants to see the proofs of theorems we'll use or want all the details, you may wish to check a textbook out from the DV bookstore.

## AP Calculus BC Exam



## If you have difficulty understanding anything...

- Please ask questions during class! Honors students often feel that asking a question is a sign of weakness, but actually the best students are often those that ask lots of questions in class.
- Try not to be absent, but if you need to miss class, I have lesson videos for all new topic day lessons in Canvas. These are videos which I've made covering the notes and examples the same as we are doing in class. Please watch the video and try the homework.
- If you have questions we don't get to in class or need more help, please come to tutoring...
  - With me: After school all school days except early release Wednesdays. Come to this classroom (C105)...no appointment needed, just drop by!
  - With Mr. Cook or Mr. Walton: If I am unavailable due to a (rare) meeting, you can also get help from Mr. Cook or Mr. Walton in their classrooms.

# Materials to bring to class

## Calculator

- Although we can only use a calculator on about 1/3 of the AP Calculus BC exam, the problems that allow a calculator are impossible to solve without one.
- It is a requirement for this course that you bring your own calculator to class every day.
- I have a few extra calculators that stay in the room that you can borrow on a first-come-first-served basis, but you can't count on these being available.
- If you don't have a calculator on a test day and all of mine are lent out, you must just take the test without a calculator which will result in a lower test score.
- We recommend the Ti-84 (any version)...best mix of capabilities and ease of use and all class examples will use Ti-84.
- You can use other calculator models (nSpire, Casio, HP) but then you are responsible for learning how to operate your calculator on your own (use YouTube videos as needed to teach yourself).



## Paper/pencils and current unit required packet

- This is primarily a paper class (not online/laptop), so bring something to write with every day.
- Bring the Required Practice Packet for the current unit to class every day (we will be working some problems from it during class as part of the lessons).

## Course procedures (stricter this year - admin is focusing on reducing the number of students out during class time)

### Bathroom pass

- Only 1 student out of the room for the bathroom at a time.
- Must get the bathroom pass directly from me.
- No passes during the first and last 10 minutes of class (strict rule campus-wide this year).
- If you need to use the bathroom:
  - Bring your phone and give it to me.
  - I will sign you out on my sheet.
  - I will give you your phone back when you return.
- You can always leave immediately if you have an emergency, but I will ask you about it when you return.

**Bathroom Schedule**

|            | Lower C East | Upper C East | Lower C West | Upper C West | A Building | E Building            | Cafeteria                 |
|------------|--------------|--------------|--------------|--------------|------------|-----------------------|---------------------------|
| 0 Hour     | Open         | Closed       | Closed       | Closed       | Open       | Open                  | Open                      |
| 1st Period | Open         | Open         | Open         | Open         | Open       | Open                  | Closed                    |
| 2nd Period | Open         | Open         | Open         | Open         | Open       | Open                  | Closed                    |
| 3rd Period | Open         | Open         | Open         | Open         | Open       | Open                  | Open (EVTT students only) |
| 4th Period | Open         | Closed       | Closed       | Closed       | Closed     | Closed                | Open                      |
| 5th Period | Open         | Closed       | Closed       | Closed       | Open       | Open                  | Open                      |
| 6th Period | Open         | Open         | Open         | Open         | Open       | Open                  | Closed                    |
| 7th Period | Open         | Open         | Open         | Open         | Open       | Open                  | Closed                    |
| 8th Hour   | Open         | Closed       | Closed       | Closed       | Closed     | Open (Athletics Only) | Closed                    |

### Times Open:

**0 Hour:** 7:40am - 8:35am

**1st Hour:** 8:45am - 9:25am

**2nd Hour:** 9:50am - 10:30am

**3rd Hour:** 10:55am - 11:35am

**During Lunch Hours:** 11:50am - 1:25pm

**6th Hour:** 1:40pm - 2:20pm

**7th Hour:** 2:45pm - 3:30pm

**8th Hour:** 3:50pm - 4:30pm



## **Course procedures** (stricter this year - admin is focusing on reducing the number of students out during class time)

### Other passes

- If you need to go anywhere other than the bathroom, I need to write you a paper pass to that specific location.
- You'll need to leave your phone with me while you are out of the room.
- You'll need to return the paper pass to me signed by an adult at your destination.

### Cellphones/headphones/ear buds

- All teachers have been directed to have cellphones "physically away from students bell-to-bell".
- Phones/electronics must stay in your backpack at all times during class.
- If I see a phone, I will confiscate it and return it to you at the end of the hour.
- There will be times when I want you to access the internet for educational reasons...you'll need to use your laptop for that.

### Food/Drink

- No food out at any time (every period has at least one person with life-threatening food allergies).
- Water okay...other drinks okay if in covered container.

## About me

- Married (Kristen)
- 2 kids (Rachel and Brian)
- Hobbies: watching movies/tv with my wife, and music (singing and playing piano, acoustic/electric guitar, bass)

## Teaching is my 2nd career...

- B.S. Electrical Engineering,
- M.Ed. Secondary Education (math)
- Electrical/Software Engineer for 20 years:  
Motorola (now General Dynamics), Orbital  
Sciences (now Northrup Grumman), Acoustic  
Imaging, EF Data, Intel) Some things I did:
  - Military radar systems
  - RF Communications systems design for space vehicles
  - Medical ultrasound design
  - Digital camera design
  - Media software (video, audio/video synchronization)
  - Freelance software engineering business.



## About you

### Survey:

- Tell me what you prefer to be called.
- Tell me if you have seating preferences (and reason).
- Tell me a little about yourself!

**When finished - Stretch break!**

## **General daily routine...**

- 1) New topic lesson - the first problems in your practice packet will be part of the lesson.**
- 2) Time to ask questions about yesterday's homework or to start working that night's homework during class.**

## Homework / practice system:

- We use a homework packet system: for each unit, there is a 'required' practice packet and an 'extra' practice packet:

The 'required' packet counts for points towards your grade.

- You must show work in your handwriting on the paper packet (or if you want to use a tablet, you can download the pdf from Canvas and complete the work in your tablet).
- The Required Practice packet is due on the day of the corresponding test.
- For full credit, required practice packets must have all problems completed with sufficient work shown.
- I will publish answers only (without work) for the required packet problems - you'll need to come up with your own work to solve these problems.
- All examples included in the lessons are part of your required practice packet, so bring your required packet every day and work the examples along with me during the lessons.

The 'extra' packet is not checked for credit...

- ...but for each problem in the required packet there will be one or more similar problems in the extra packet for which I will publish full solutions with work shown.
- If you find that you are not scoring as high as you'd like on tests, consider doing all of the extra practice packet problems in addition to the required practice - more practice helps you work more quickly and confidently on tests :)

**When completing homework: Work a problem in required packet and check the answer. If you got it wrong or couldn't finish it, work the corresponding problem(s) in the extra packet and use published full solutions to learn. Then go back and rework the required problem.**

## **You can find information about our course in 2 places:**

- 1) Canvas
- 2) General internet website: [www.mrfelling.com](http://www.mrfelling.com)

Content is mirrored on both sites, so you can use either or switch to the other one if one becomes unavailable.

(The one exception is in 4th quarter, when we are reviewing the entire course to prep for the AP Exam, I publish that material only in Canvas so that it isn't on the general internet to avoid copyright issues with College Board.)

## **Taking this course for college credit** *(Go over the handout)*

Please take the info sheet about college credit home  
and discuss your options with your parents.

- It is very beneficial to be taking AP level classes in high school, whether or not you are taking them for college credit! Exposure to college level material early greatly increases the probability of you doing well in college!
- Whether it makes sense for you to pay money to get college credit now depends upon a number of factors - I've tried to discuss these fully in the handout.

**Bring your calculator tomorrow (we will be reviewing important calculator techniques/procedures tomorrow).**

*Questions?*

