> # Centennial High School
> # AP Calculus C with Multivariate & Vector Calculus
> # Syllabus
> # 2015-2016

Instructor:

Mr. Kennedy
Office Hours: TBA
Email: rkennedy@hcpss.org

Course Description

This course is designed to prepare students to take the AP Calculus BC exam, as well as to develop the maturity and sophistication of their mathematical reasoning. To the extent possible the course will use collaborative problem based learning. Mathematics is a full contact sport and can only be mastered by doing it. As a result, pure lecture will not be used, but from time to time a lecture discussion format will be. The course will use the graphing calculator, and students will learn to prepare mathematical documents using LaTeX.

Objectives

1. Prepare for Success on AP Calculus BC exam

2. Extend concepts of single-variable calculus to vector-valued and multivariate functions

3. Develop mathematical reasoning and communication

4. Improve mathematical modeling skills

5. Utilize appropriate technological tools such as the graphing calculator, and LaTeX

Materials

Students are expected to make judicious choices regarding what supplies they will need to meet the objectives and requirements; however, certain materials each student must have and some are suggested:

Required Materials:
- Pencil
- Graph Paper
- Graphing Calculator
- ShareLaTeX account

Suggested Materials:
- Colored pencils/pens
- Short straightedge
- Laptop computer

The graphing calculator will be essential to prepare for aspects of the AP Calculus BC exam, and will be used appropriately in order to achieve a '5' on the exam. Frequently in class I will use *Mathematica* to demonstrate or highlight important concepts. A graphing calculator has limited ability with respect to the advanced mathematics we will consider, particularly in the Second Semester; therefore, you may want to consider purchasing a student version of *Mathematica*. At university you will use similar software.

Communication

With the Class:

In my opinion face-to-face communication is the most productive and is preferred; however, technological communication is indispensable. Aside from the standard forms of e-communication the class will also utilize www.sharelatex.com .

With Mr. Kennedy:

Your mathematical development and achievement are essential to me; consequently, I will give to you as much of my time as I can in order to help you understand the content. I want to help you.

However, given your maturity, proximity to university and your aspirations I expect for you to approach me when you need assistance. I believe that advocating for oneself is a skill that must be practiced. With that said I do not preclude the option of checking in with you if I have concerns about your progress.

Course Requirements

General Expectations:

This is a college level course. As such, I expect for you to demonstrate a high degree of responsibility both in your learning and in your comportment. I will expect adherence to the rules and protocols of Centennial High as well as those of my classroom.

In my classroom, respect for others and the learning environment are paramount. Inappropriate student behavior will be addressed by me immediately according to my professional judgment.

The detail of this course syllabus is not exhaustive and can be modified as necessary.

Attendance:

Regular attendance, which includes timeliness to class, is expected. Being *timely* to class means being at your desk ready for the day's learning when I begin class, and I always start at the bell.

If you are unexpectedly absent it is your responsibility to speak with me personally on the first day of your return to class. If you fail to do so you may not be given the opportunity to make up any missed work or assessment.

If you will have a scheduled absence you must inform me of the absence via email. In the email, please indicate the anticipated dates of your absence and which administrator approved your absence.

Homework:

Homework is an essential element of every class. There will be daily assignments which will be periodically collected, as well as longer term assignments. On the due date, or date of collection, of any assignment you must hand in either the completed assignment or the *Application for the Acceptance of Late Work* form found near the end of the syllabus. The form should be self explanatory, but if you have any questions please ask. In addition to this form, you can always petition, in advance, for an adjusted due date if your obligations are overwhelming.

In addition to the formal assignments there is another critical element of daily study. Each student must strive to be able to reproduce each argument presented or studied in class. If you cannot reproduce a result then there is something that about the mathematics that you do not understand. Incomplete comprehension can quickly compound. Please be sure to seek clarity.

Assessment & Scoring:

Each week students will be given either a quiz or test. Quizzes are sometimes announced, whereas tests are always announced. Unless otherwise stated students will not be able to use any sort of electronic device while taking a quiz or test.

There will be four types of assignment or assessment computed to determine your quarter grade: Homework, Classwork, Quizzes, and Tests. Each type will be recorded as a simple average. The simple average of each type will be weighted as follows:

Type	Weight
Classwork	10%
Homework	10%
Quizzes	35%
Tests	45%
	100%

Sometimes I make an error in scoring or a persuasive case can be made for changing the score or a particular assignment or assessment. Such appeals can be made in writing by completing the *Assignment/Assessment Scoring Appeal* form found near the end of the syllabus. This form should also be self-explanatory but please ask if it is not. Score changes are serious business and must be addressed transparently in writing.

Academic Integrity

Integrity in the acquisition and production of knowledge is indispensable. There are no shortcuts to acquiring knowledge. Its pursuit is hard work and anything less will result in flawed or incomplete understanding. Moreover, you may not realize just how incomplete or flawed your *understanding* is. Similarly, a lack of integrity in the production of knowledge will yield results that are unreliable and a distraction from the acquisition or production of new knowledge.

Since my primary interest is helping you to learn and to think in a sophisticated manner I will not tolerate any behavior that may undermine this goal. Consequently, academic dishonesty will be dealt with swiftly and harshly. Academic dishonesty at the university level will likely lead to expulsion!

Application for the Acceptance of Late Work

Name: _____

Date: _____

Assignment Due Date: _____

Name/Description of Assignment: _____

_____

Anticipated Submission Date: _____

Reason for being late: _____

_____

_____

_____

What will you do to ensure timely submission in the future? _____

_____

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_____

For Mr. Kennedy Only

Disposition: _____

_____

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Assignment/Assessment Scoring Appeal

Name: _____

Date: _____

Assignment/Assessment: _____

Instructions: Explain the nature of the error or why you believe the score you received is incorrect. Cite examples, theorems, etc. as necessary to prove your case. Please attach extra sheets if necessary. Include the entire assignment/assessment that is being appealed including any answer sheets.

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For Mr. Kennedy Only

Disposition: _____

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Suggested Reading:

The following is a list of math books or math related books. Many of which I have read and use as reference or inspiration. I share this list in the hope that you will enjoy some of these books as much as I do.

References

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