AP Calculus Course Syllabus

Mrs. Donna McMichen

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COURSE DESCRIPTION:

This is an AP Calculus class with two goals: to learn material presented in a college-level Calculus I class and to achieve a score on the AP Exam given by the College Board in May that is good enough to obtain college credit. Students should be motivated and possess excellent practice and study habits and an overall willingness to work hard and learn in a variety of formats.

The primary emphasis is to teach the student to develop an intuitive understanding of concepts of Calculus and its models and applications. The student must apply theorems and learn definitions, but formal proofs are mostly left to courses in college. Communication in this course is important, however, as students are expected to give written justification for all of the processes used throughout.

Students will be taught using the "Verbally NAG" method, also referred to as the rule of four: verbally, numerically, analytically, and graphically. Graphing calculators, will be used often. Spiraling is used to make connections to previously-learned topics, including those from past math courses. The textbook is utilized as a resource for practice problems, both in and outside of class, and should therefore be accessed in class each day along with the Chromebook.

AP Exam: Students are expected to take the AP Calculus AB Exam on Monday, May 9th. The cost will be around $95, but subsidies may be available to reduce cost or waive entirely. AP Exam information will be provided through the AAS AP Exams Google Classroom. Let me know if this class is not on your dashboard.

Virtual Textbook: https://openstax.org/details/books/calculus-volume-1 *(View online or via Open Stx + SE app, both free)*

COURSE CONTENT & UNITS:	***Approximate date of assessment**
Unit 1: Limits & Continuity	Thurs., Jan 27th
Unit 2: Differentiation - Definition & Basic Derivative Rules	Thurs., Feb 10th
Unit 3: Differentiation - Composite, Implicit, & Inverse Functions	Mon., Feb 28th
Unit 4: Contextual Applications of Derivatives	Thurs., Mar 10th
Unit 5: Analytical Applications of Derivatives	Fri., Mar. 25th
Unit 6: Integration and Accumulation of Change	Wed., Apr. 13th
Unit 7: Differential Equations	Tue., Apr. 21st
Unit 8: Applications of Integration	Fri., May 5th
AP Exam Review	ongoing

****AP Exam: May 9th****
****Final Exam: TBD****

Please see the Curriculum and Pacing Guide for a breakdown of test and quiz dates.

GRADING:

Assessments will be graded using a point method, but Infinite Campus requires percentage conversions so weights will be applied. You must show all work (even if you use a calculator) to ensure full credit is received for correct answers. Students will receive progress reports throughout the course; however, credit for successful completion of the course will not be awarded until the end of the course. Letter grades will be assigned according to a student's current average in the course, including the (10) AP points added at the conclusion of the course:

A = 90 – 100 B = 80 – 89 C = 74 – 79 D = 70 – 73 F = 69 or below

Infinite Campus Gradebook will be updated frequently with assessment grades. Parents and students should remain on top of grades throughout the semester. Please contact the counseling department immediately if you do not have access.

MOST UNITS will contain the following:

Assessments (40% of average)

1 Summative Test	100 points…… weight 1.00
1 to 2 Formative Assessments	20-50 points each…….. weight 0.20 - 0.50
1 Free Response Packet (FRQs)	27 points…….. weight 0.25

Practice (40% of average)

2 to 5 Practice Assignments (group & individual) ……. miscellaneous points and weight

Other Important Items to note:

- All work should be completed in pencil.
- You must show all work (even when you use a calculator) to ensure full credit is received for correct answers.
- All decimal answers must be accurate to three decimal places (this is a College Board requirement for AP Calculus).
- When absent, you are responsible for contacting the teacher to determine any missed work and arranging completion of same. Note: If only a "review" day was missed, the student will not receive an additional day to review for a test; instead, s/he will be expected to take the test at the regularly-scheduled me.

  Also Note: If a test was missed, the student will be expected to make up the test on the day s/he returns (if numerous absences prior to the test, please make other arrangements with the teacher in advance of returning to school).

*** *Absences on test day may prevent students from submitting Test Corrections, if any.****

- **There will be a cumulative Final Exam in May that accounts for 20% of your final grade**

CLASSROOM POLICIES & PROCEDURES:

Participation:

All students are encouraged *and expected* to ask questions and participate fully in class discussions and group assignments and/or assessments.

Homework:

Homework is an essential part of the learning process for mathematics and will therefore be assigned daily. All work and steps must be neatly shown—in pencil—for each problem. *Assume all questions are non-calculator unless otherwise stated.* Homework may be checked either for accuracy or completion, but will not always be graded. The frequency of these checks and grades is at my discretion. Many times, students will check their own work using a posted key or rubric, and will be expected to reflect on their own mistakes and ask questions to clear up misconceptions.

Due to the limited class time for this course, a significant portion of the content will be presented in a "flipped" format. That is, you will be assigned videos and/or interactive learning activities to complete before our class meeting. Your completion of all assigned material is essential, since we will utilize our class time as work sessions. If you are not adequately prepared, you will fall behind.

Free Response Questions (FRQs):

In addition to daily homework assignments, students will have Free Response Questions (FRQs). *Guidelines for preparation of these problems are very specific and must be followed, but will be shared at a later time.* Questions are to be completed WITHOUT A CALCULATOR unless clearly stated otherwise. Students are allowed to discuss these problems with each other; in fact, such discussions are encouraged. Students will only be able to seek my assistance on FRQs outside of class time; I will not spend class time on these problems. FRQs will be graded on a nine-point scale (per question). Students will be given about 7 days to complete each FRQ Packet. FRQs are not accepted late for any reason.

Quizzes:
Quizzes will be given throughout the semester to assess current mastery of skills. The quizzes may be given on an announced or unannounced schedule, and may be completed individually or in small groups. Quiz grades may be replaced by corresponding test grades if improvement is evident. *Missed quizzes will not be made up; instead, missed quizzes will be replaced with the corresponding test grade.*

Tests:
There will be 1 major test each unit. A student who is absent from school the day before an announced test will be held responsible for taking the test at the scheduled me, as they would have only missed a review. If a student is absent on a test day, s/he must immediately make-up the test the following day as failing to do so affects the offer of test corrections, if any, for the class. Tests will be cumulative and will contain content from previous units to help ensure retention of concepts.

Final Exam:
The final exam is cumulative. I highly recommend reviewing past material periodically so you are not overwhelmed reviewing prior to the AP Exam and the Final Exam.

Attendance:
Attendance is extremely important, especially in an AP course and even more so on a block schedule. It is the responsibility of the student to make arrangements for missed work or assessments, and to secure any notes from classmates. Please utilize my teacher page, our class electronic files, Remind, and email regularly to remain up-to-date on class material.

My Availability:
I am most easily available immediately after class for help. You can always email, send me a message through email or Google Classroom, or simply ask my availability during class, but please let me know your plans in advance to be certain I am available.

School and County Rules & Procedures:
Rules and Procedures outlined by the school and county will be followed.

SUPPLIES:

Notebook:	Students should utilize a 3-ring binder organized with dividers by Unit Name (8 units).
Pencils:	All assignments must be completed in pencil.
Paper:	Loose leaf notebook paper (college or wide ruled). Graphing paper will be helpful, as well.
Stylus:	Stylus for writing on the touchscreen of Chromebook could be very useful.
Calculator:	Desmos.com is an excellent online graphing calculator. If you prefer a handheld, I would recommend either the TI-84 Plus CE or the TI-Nspire CX CASII
Technology:	Students will need their Chromebooks daily.

CLASSROOM RULES:

1.) Be on time
2.) Be prepared

3.) Listen and pay attention
4.) Participate and communicate
5.) Be respectful of others
6.) Obey all school rules

NOTICE: TEACHER RESERVES THE RIGHT TO CHANGE OR ADJUST ANY SECTION OF THE COURSE SYLLABUS DURING THE SEMESTER WHEN THE NEEDS, ABILITIES, AND INTERESTS OF THE STUDENTS INDICATE SUCH CHANGE IS NECESSARY.

Dear Students,

Understanding the following bulleted points will help you achieve success in AP Calculus:

- Calculus is likely to require a substantial investment of time. You should work on calculus every day. Plan for daily homework assignments, and even assignments over breaks.
- One of the best ways to learn anything is to explain it to someone else, and working in groups—both in and outside of class—is an excellent opportunity for doing so. Study groups are encouraged.
- Many problems cannot be solved with a simple application of a "formula." Understanding the process for solving a particular type of problem is emphasized in this class over memorizing formulas.
- During class, we will be applying and working through many examples you were introduced to in the previously viewed College Board assigned videos. Pay attention in class, participate, and take notes. You will also need to read your notes to ensure understanding, and revisit your notes regularly to ensure retention.

Dear Parents,

This is a challenging college-level course, and it is important that your student review the requirements of the class and plan appropriately. Regular class attendance is essential; likewise, the student must do his or her homework consistently. A central component to succeeding in this course is the responsibility of the student to keep up with the presented material. It can become a "mission impossible" to try and makeup neglected work, regardless of the reasons, please encourage your child to seek help promptly should s/he encounter difficulties. Help is available. Lastly, please be patient as your child learns to adjust to an AP Math Course. Lower than usual grades at the onset are normal; there will be plenty of opportunities to improve and/or replace them, and with a solid and consistent work ethic, your child should earn a grade in line with what they are accustomed to in Honors/AP Math Courses.

As we approach the AP Calculus AB Exam in the spring, additional practice sessions outside of class time will be strongly recommended. Please be aware and plan accordingly because overextended students may have difficulties finding the same level of success to which they are accustomed.

Please check in with your student frequently, monitor his/her grades on Infinite Campus, and contact me should you have any concerns. I will respond promptly.

I am looking forward to a great semester!

Donna McMichen
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