

AP Calculus AB/BC Syllabus

Welcome!

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AP Calculus is designed for students who have successfully mastered Honors Pre-Calculus and IM 3. The goals of this course are to prepare students for college-level mathematics, improve critical thinking, prepare for the AP exam, and develop an appreciation for mathematics.

You will need to be resourceful, seeking out information and help whenever you find the course challenging.

Topics:

AP Calculus AB

- Ch 1: Functions
- Ch 2: Limits and Continuity
- Ch 3: The Derivative
- Ch 4: Derivatives of Logarithmic, Exponential and Inverse Trig Functions
- Ch 5: The Derivative in Graphing and Applications
- Ch 6: Integration
- Ch 7: Applications of the Definite Integral

AP Calculus BC

- Ch 7: Applications of the Definite Integral
- Ch 8: Principles of Integral Evaluation
- Ch 9: Mathematical Modeling with Differential Equations
- Ch. 10: Infinite Series
- Ch. 11: Working in Polar/Vectors

Prerequisites:

- You must commit to completing 60 minutes of homework each night.
- When the material is challenging, you must be willing to seek extra help.
- AP Calc AB: Honors Pre-Calculus with at least a “B” average
- AP Calc BC: AP Calc AB with at least a “C” average

Required Materials:

1) Binder:

Separate your 3-ring binder into the following sections using dividers with tabs:

- Current Unit
- Past Unit
- Test/Quiz
- Misc.

- 2) Graph Paper Spiral
- 3) Lined Paper Spiral (Tool Kit)
- 4) Sharpened Pencil
- 5) Graphing Calculator:
- 6) Barron’s AP Calculus Test Prep Book

See AP Calculus Calculator List at:

<https://apstudent.collegeboard.org/takingtheexam/exam-policies/calculator-policy>

Highly Recommended:

Highlighter, Colored Pencils, Index Cards, Post-its,

Grades:

The approximate weighting for grades is:

Quizzes	2%
Tests	68%
Assignments	12%
Final	18%

Grades will be assigned as follows:

A	90—100%
B	80— 89%
C	70— 79%
D	60— 69%
F	Below 60%

Tutoring:

I will be available most Tuesdays and Thursdays after school (2:30 to 3:30 pm).
The Math Center is open on Tuesdays, Wednesdays and Thursdays after school.
Intervention Periods are Wednesdays and Thursdays.

Helpful Details....

Communication	My e-mail is amuller@rjuhsd.us . It is my hope that students speak directly to me before parental contact is made. Seeking clarification or resolution on issues such as grades or absences is an important skill that students need to practice. Furthermore, students are expected to accurately communicate grades to parents, but parents can check grades on-line.										
Extra Credit	Extra credit is not available upon request and will not be issued to fix a grade. Some extra credit will be awarded at the end of the course for good participation in class. Earn points by volunteering to go to the board. Complete homework and classwork for additional points. Extra credit is restricted to 2% of your grade.										
Grades: Homelink	<p>It is the student's responsibility to check his or her grade regularly using Homelink. It is also the student's responsibility to accurately communicate this grade to his or her parents so they can be helpful and supportive.</p> <p>To access student grade information from home, go to HomeLink at http://homelink.rjuhsd.us. This site has information to help you get started.</p> <p>Math grades will be updated once every two weeks.</p>										
Grades: Progress Reports	<p>Parents should expect grades approximately one week after each of the following dates:</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Progress Grades</u></th> <th style="text-align: center;"><u>Final Grades</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">09/06/19</td> <td style="text-align: center;">10/11/19</td> </tr> <tr> <td style="text-align: center;">11/08/19</td> <td style="text-align: center;">12/20/19</td> </tr> <tr> <td style="text-align: center;">02/07/20</td> <td style="text-align: center;">03/13/20</td> </tr> <tr> <td style="text-align: center;">04/24/20</td> <td style="text-align: center;">05/28/20</td> </tr> </tbody> </table>	<u>Progress Grades</u>	<u>Final Grades</u>	09/06/19	10/11/19	11/08/19	12/20/19	02/07/20	03/13/20	04/24/20	05/28/20
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Help at School:	<p>For tutoring, I'm available most Tuesdays and Thursdays after school until 3:30 pm. You may also visit the Math Center T-TH from 2:30 until 3:30. (Please ask for location.) To all tutoring sessions, please remember to bring along your materials as well as a list of questions.</p> <p>Intervention period for Calculus will be on Wednesdays and Thursdays. Attendance is mandatory for students who have less than 73% in the class.</p>										
Homework	<ol style="list-style-type: none"> 1) This is a college level math course. You must practice to be successful. Homework must be completed on time. 2) I have provided 6 late passes which can be used as follows: <ul style="list-style-type: none"> - Late homework must be completed within 2 days of due date and before the unit exam. - Only one late pass will be accepted in a school week. - All other late work (received within 2 days of due date and before exam) will receive half credit. 4) LATE WORK WILL NOT BE ACCEPTED AFTER AN EXAM. 5) Test corrections will be offered on occasion to improve test scores. Failure to complete at least 85% of the work for a unit will disqualify a student from this opportunity. <p style="text-align: center;">NO HOMEWORK = NO TEST CORRECTIONS OR OTHER OPPORTUNITIES TO FIX A TEST SCORE</p> <p><u>EXCUSED ABSENCES:</u> You will be given as many days as you were absent to make up missed work, but please utilize email and Google Classroom to stay as current as possible.</p>										

<p>Tests/Quizzes – Testing Protocols</p>	<p>During a test, you may not talk, pass notes or calculators, look at another’s paper, use a cell phone, allow someone to view your paper, sit sideways in your desk or use unauthorized materials or devices to help you with the exam.</p> <p>Cheating is punishable by a zero score on the exam without possibility of a make-up and a referral to an administrator.</p>
<p>Tests/Quizzes – Make-ups for excused absences</p>	<p>Tests: Students who are absent on the day of a test must make-up the exam after school the day he/she returns from the absence.</p> <p>Quizzes: If a student needs to make up a missed quiz due to an excused absence, the student must do so before the quiz is returned to the other students. Please take care of absences promptly by seeing me after school.</p> <p>A student absent the day before a test or quiz must take the test or quiz on time.</p>



Seek help when you need it!
Wednesdays and Thursdays after school
Intervention Periods

EXPECTATIONS FOR STUDENT BEHAVIOR

AP Calculus is a challenging class. Not only will you need to rely on all of your previous understandings of algebra, geometry and trigonometry, you will be learning calculus, a college level math class. Frustration with the material is to be expected. To ease this frustration, you will need to really listen to others, ask questions, be patient, use internet resources and work hard. To keep us moving forward, it is important to demonstrate respect for everyone as we work together. In order to facilitate this I have laid out below my expectations for AP Calculus.

VIKING EXPECTATIONS	CHOOSE RESPECT	BE RESPONSIBLE	HAVE INTEGRITY	ACTIVELY ENGAGE
EXPECTED STUDENT BEHAVIOR	<p>Be on time.</p> <p>Use appropriate language and tone with everyone.</p> <p>Be patient with yourself and others.</p>	<p>Be present-physically and mentally.</p> <p>Avoid missing class and over-scheduling.</p> <p>Use Google Classroom daily to pick up assignments or notifications.</p> <p>Seek help as soon as you need it.</p>	<p>Give all homework <i>your</i> best attempt.</p> <p>Be truthful in all communications with teachers and parents.</p> <p>Do not share quiz or test information with other classes.</p> <p>Adhere to testing protocols.</p>	<p>Use technology appropriately.</p> <p>Ask for help when you need it. Be helpful to anyone who asks.</p> <p>Take an active, positive role in classroom discussions.</p> <p>Pack up only when we have finished.</p> <p>Remain in your seat until the closing bell.</p>
Classroom Routine/Behavioral Expectations				
Entering the Classroom	<ul style="list-style-type: none"> Take out yesterday's work, your spiral for notetaking and a pencil. Be ready to start working. 			
Working in Groups	<ul style="list-style-type: none"> Contribute equally in pairs and in groups. Remain on task. Use unstructured time wisely. 			
Technology Use	<ul style="list-style-type: none"> Treat the chromebooks with respect. Remove and return carefully to cart. Bring your charged chromebook to class daily. Cellphones should be upside down on your desk or in your backpack. Your cellphone use may not interfere with instruction or learning. Video gaming and use of earphones are absolutely prohibited during class time. 			
Asking for Help	<ul style="list-style-type: none"> Ask questions during lecture and teamwork. Use Intervention or after school hours to seek extra help. Utilize all resources including textbook, internet and willing friends/neighbors. 			
Missing Class/Hall Passes	<ul style="list-style-type: none"> Avoid missing class. Reasons, even good ones, do not fix grades. If you must miss class, use Google Classroom/email teacher for missed work. If you miss an exam, see teacher immediately to arrange a testing time. <i>Students who are absent on the day of a test must make-up the exam after school the day he/she returns from the absence.</i> Tests may not be retaken during intervention period. There is not enough time. Use hand signal to request bathroom break. Choose a time which minimizes disruption to your learning. Sign out. Don't abuse the privilege. 			
End of Class	<ul style="list-style-type: none"> Do not pack up until directed. Remain in your seats until the bell rings. 			

HOW TO SUCCEED IN CALCULUS¹



KEEP UP WITH THE ASSIGNMENTS!

The best indicator of a student's success is whether they keep up with their assignments. AP Calculus is a long, grueling trek, but it is essential that you KEEP UP.

REMEMBER THAT THE GOAL OF AN ASSIGNMENT IS TO UNDERSTAND THE MATERIAL - NOT JUST GET THE PROBLEMS DONE!

You understand the material when you can do the problems - and get them right - BY YOURSELF. You must have the integrity to realize that the goal of the assignment is NOT just to get the assigned problems done. When I select problems for an assignment, I try to pick enough representative problems to provide adequate practice for the "average" student.

There will be times when you will need more practice than this, and you must have the courage and integrity to realize it.

TREAT ASSIGNMENTS AS "PRACTICE TESTS".

Fifty percent of your score on the AP test will be determined from your solutions to free-response questions. For these problems, the correct answer counts for as little as twenty-five percent of the total score. The rest of the points are awarded on the quality of your solution to the problem. This means that if you have correct answers for all problems without organized, complete and readable work, you will fail miserably. Use your assignments as an opportunity to practice presenting well-organized mathematical solutions to problems.

READ THE BOOK.

This is important in every class, but in this class the text serves as a valuable supplement to what happens in class. It is **not** just a place to find the homework problems. Read the book slowly, line-by-line, with a pencil and paper nearby. Pay particular attention to the illustrations and examples. Study the examples carefully. Work through them with the authors. Be sure that you know how the authors get from one step to the next.

LEARN THE VOCABULARY AND SYMBOLS.

It is vitally important that we can communicate in the language of mathematics. As you read or participate in class, pay particular attention to the meaning of each new term and symbol.

UNDERSTAND THE USAGE OF, AND MEMORIZE EACH NEW FORMULA.

It is crucial to your success at just about everything that we will do this year. Also, having a calculator does **not** mean that you don't need to know any mathematics.

TAKE GOOD NOTES DURING EACH CLASS.

Good notes are essential for success in any technical field. They are essential for review - not only for tests, but also for the problems you will work that evening.

REVIEW CONSTANTLY.

Tests and quizzes are cumulative. We will review extensively in class. Review is *somewhat* automatic. Don't hesitate to go back to review or seek help on algebra, geometry, and trigonometry skills. The majority of the errors that students make on tests and quizzes are **not** calculus mistakes. They are algebra, geometry, and trigonometry mistakes.

EVERY MINUTE OF CLASS TIME IS VALUABLE!

Use time at the beginning of class to get ready for calculus. Get out your books, assignments, notebooks, pencils, etc. What questions do you have about yesterday's work? Socializing may be more pleasant than math, but the goal is to make math more pleasant, and socializing gets in the way. Use this time to discuss your questions about calculus.

ORGANIZE.

Your success depends on your ability to recall concepts and techniques which were introduced earlier. If your notes and assignments are scattered about, you're sunk.

BE READY FOR CONSTANT ASSESSMENT.

We will have a major test approximately every two weeks during the year. Additionally, we will have many short quizzes. Each test covers everything from the first day onward. Today's quiz is probably strikingly similar to a couple of the homework problems due yesterday.

BECOME AS SELF-SUFFICIENT AS POSSIBLE.

There are many students, and just one teacher, and time is too valuable for you to just wait for help. Look in your text and your notes for sample problems that might shed some light on your difficulty. Learn tenacity. Don't just "fold" at the first sign of difficulty. Is there another way to approach the problem? You can do it!

SEEK HELP AGGRESSIVELY.

Everyone, no matter how skilled in math, will get "stuck" sometime this year. Perhaps there is a new concept or technique that just won't fit into place in your brain, or maybe you realize a year too late that Mrs. Rieker and Mrs. Muller were right when they said "You're going to need this for Calculus!" Attend intervention. Ask questions in class. Get the help you need to succeed.

BECOME PROFICIENT AT USING A GRAPHING CALCULATOR.

On parts of the AP exam, as well as on tests and quizzes during the year, you will be required to demonstrate your mastery of the graphing calculator as a mathematical tool. Learn to use it well. Become familiar with ALL of the ways that your calculator can be used to solve a problem.

BECOME PROFICIENT AT NOT USING YOUR GRAPHING CALCULATOR.

Be aware that you may not use your calculator for all parts of the AP exam, and that some quizzes and tests will contain "No Calculator" problems.

COMMUNICATE.

If you have a worry, complaint, suggestion, or concern of any kind let me know. I can't fix it if I don't know about it. Speak up!

¹adapted from *How to Succeed in Calculus*, by Dave Slomer