

Welcome to AP Calculus BC! My name is Tosh Demsey and I'll be your instructor for this class. I look forward to getting to know you and helping you learn more about the fascinating language of mathematics. Language? Doesn't that just refer to subjects like English, Spanish, and French? Usually it does, but mathematics has a lot of things in common with linguistic languages. For example, mathematics has its own vocabulary and its own "grammatical" rules about how to communicate to others in writing and speech. Mathematics is not only the language of science, it is the language of patterns, logic, and abstract thought that provides a great deal of insight into the world around us. While you may think of mathematics as just memorizing a bunch of formulas, there is a lot of room for creativity in mathematics. There is often more than one way to arrive at the correct solution, and I encourage you to use both sides of your brain in this course. Think of today as the beginning of a journey. I'll be your guide.

Tosh Demsey
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You can find classroom handouts, videos of classroom notes, and online resources to help you in this course at:
<http://www.mrdemsey.com>

If you have a Facebook account, please search for "MrDemseys APcalculusclass" and add as a friend so you will get messages from me as well as being able to have a place to communicate with your peers taking AP Calculus. To receive text messages from me via Remind, please send a text message to (424) 543-7245 and type in the message "@mrdcalbc". If you have not previously used Remind for another teacher, you will receive a text message back that requests that you type in your name. You will earn 20 points of extra credit each for Facebook and Remind.

Course Description

This course is an introductory course in calculus that is designed to prepare you to take the Calculus BC Advanced Placement examination. The course will incorporate many aspects of algebra, geometry, and trigonometry and introduce the concepts of limits, differentiating, integrating, series, and many applications.

Recommended Course materials

Graphing calculator – (TI-83 Plus, TI-84, or TI-Nspire CX recommended)

Graphing paper

Notebook paper

3-ring binder(s) for portfolio

Course Outline

Prerequisite Chapter

Goal: You will review the basic concepts of algebra, geometry, and trigonometry that will be needed for this course.

Chapter 1: Limits & Differentiation Rules

Goal: You will understand the concepts of limits and continuity and be able to solve limit problems graphically and analytically. You will learn how to apply the various methods of explicit differentiation and be able to apply them to solve problems involving motion in a straight line.

Goal: You will learn how to apply the various methods of explicit and implicit differentiation and be able to apply them to solve related rate problems and problems involving motion in a straight line.

Chapter 2: Applications of the Derivative

Goal: You will learn how to use implicit differentiation and be able to apply it to solve related rate problems. You will understand how to interpret derivatives from an analytical, graphical, and numerical perspective. You will also be able to use derivatives to solve applied problems involving optimization.

Chapter 3: Antiderivatives; Integration and Applications; Exponential, Logarithmic, Inverse Functions;
Solving Differential Equations and Slope Fields

Goal: You learn how to use antiderivatives to evaluate indefinite and definite integrals. You will also learn how to use approximation methods to estimate the value of definite integrals with numerical applied problems. You will be able to find derivatives and integrals involving logarithmic and exponential functions. You will be able to use separation of variables and integration to solve simple differential equations and be able to sketch slope fields to sketch the general and particular solutions to differential equations.

Chapter 4: Area, Volume, and Applications of Integration and Differentiation Using the
Graphing Calculator

Goal: You will be able to use the definite integral to find area of two-dimensional regions and the volume of three-dimensional shapes using various methods. You will be able to use a graphing calculator to assist you in analyzing real-world applications of integration and differentiation.

Chapter 5: Polar, Parametric, and Vector Functions

Goal: You will be able to understand how to differentiate and integrate using polar, parametric, and vector functions with a variety of real-world applications.

Chapter 6: Series

Goal: You will be able to understand the concepts of convergence and divergence and apply them. You will be able to analyze, interpret, and apply different types of series including Power, MacLauren, and Taylor.

Grading guidelines

Your grade will consist of the following components:

70% Exams and Project

There will be an exam at the end of each chapter. Exams will **NOT** be graded on a curve. There will be a project during the second semester after the AP Exam.

25% Homework

Every homework assignment is required to have **your name, period of class, and problem set #**. You are to attach the cover sheet containing the problems to the top of your homework assignment. You are also expected to have good **penmanship** so that both you and I can easily read what you write. **You are required to show all your work.** See **Mr. Demsey's Homework Rubric** for detailed point breakdown of homework assignments.

5% Participation and Portfolio

You are expected to come to class on-time and prepared to work. You are expected to fully participate in all classroom discussion, individual and group work, and other classroom activities including taking notes. You are also expected to follow the classroom and school rules. Each day you will earn positive and/or negative ClassDojo participation points based upon your fulfillment of these requirements.

Positive ClassDojo Participation Points	Negative ClassDojo Participation Points
Hard Work	Disrupting Class
Helping Others	Late to Class (unexcused)
Homework Completed & brought to class	No Homework brought to class
Great Insight	Breaking Classroom Rules
Working well with others	Being Off Task
Participation during notes	Unauthorized use of Electronic Device

Your **portfolio** is the collection of all homework assignments, notes, quizzes, handouts, etc. for this class. To receive full credit, the portfolio must be neat, complete, and organized chronologically. Portfolios will be turned in and graded towards the end of the 2nd semester.

Grading Scale

97.5%	A+	92.5%	A	90.0%	A-
87.5%	B+	82.5%	B	80.0%	B-
77.5%	C+	72.5%	C	70.0%	C-
67.5%	D+	62.5%	D	60.0%	D-
<60.0%	F				

Review Sessions for the Final and AP Calculus BC Exam

In the weeks leading up to the AP Calculus BC Exam (Tuesday May 5, 2015), I will hold several review sessions in my classroom to help prepare you for both the AP Calculus BC Exam and the Final. These will primarily be held during the week afterschool and/or in the early evenings in my classroom with some held on Saturdays. You will be required to attend at least 10 hours of review sessions that will contribute to the homework portion of your grade with hours above and beyond 10 hours earning extra credit. If you are unable to attend 10 hours of review sessions, you must let Mr. Demsey know so that you can complete alternate assignments instead.

Mr. Demsey's Classroom Rules

Every student has the right to a good learning environment in class. To ensure that all students have this opportunity, the following rules are set forth:

- 1) **Treat everyone and their property respectfully.**
- 2) **No profanity or inappropriate language.**
- 3) **No eating or drinking during class except water or drinks in spill-resistant containers.**
- 4) **Do not pack up your stuff unless you have completed all your work or there is only 1 minute left in class.**
- 5) **Clean up after yourself and push your chair under your desk before you leave.**

No cheating or copying on exams or homework. Doing so will result in an automatic zero on the assignment and parental notification.

Restroom policy

You are permitted to leave class to use the restroom, blow your nose, get a drink of water, etc. during class time up to 5 times during each semester. You must ask permission from Mr. Demsey prior to leaving class and you should not be out of class for more than 10 minutes. You will receive **extra credit** at the end of each semester for each of the 5 times you do not use.

Policies on missed homework/exams

The number of days you are absent is the number of days (after you return) you have to receive full credit for homework. For example, if you are absent Monday and Tuesday, you have until Friday to turn in the missed assignments. If you are absent for an extended period of time, talk to Mr. Demsey to set up a reasonable due date. If you miss an exam, you must take a makeup exam on the designated day. Failure to do so will result in a zero on the exam. A retake exam will only be allowed if you take the original exam on the date of the original exam. **If you know in advance that you will be absent, please notify Mr. Demsey as soon as possible (preferably at least three days in advance of your first absence) so that you can receive the assignments that you will miss.**

Mr. Demsey's Office Hours

For my students who would like to receive additional help with math outside of normal class time.

Tuesday: Lunch & Afterschool until 4:00 p.m.
Wednesday: Lunch & Afterschool until 4:00 p.m.
Thursday: Lunch & Afterschool until 4:00 p.m.

Mr. Demsey reserves the right to make changes to this syllabus upon notification of all students.