AP CALCULUS (AB)

(Mr. Henderson)

Overview - This course is designed for college-bound students who have an interest in advanced Mathematics. This course demands extra time and effort. The ultimate goal is to give students the opportunity to grow in their knowledge of advanced mathematics, to learn responsibility and how to handle challenges, and to earn college credit while still in high school if a student passes the AP Calculus AB exam in the beginning of May. **To earn college credit, expect to do college level work! This <u>will</u> be the most challenging math class you have ever taken.**

Textbook - Calculus: Graphical, Numerical, Algebraic (Finney, Demana, Waits, Kennedy, 3rd Edition)

Class Materials Bring your textbook, notebook (or loose leaf paper in a 3-ring binder), pencils, graph paper, and a graphing calculator every day. Mr. Henderson is very experienced with any TI-83 or TI-84 series calculator. The TI-89 is an acceptable calculator that Mr. Henderson has less experience with (but is ready to learn along with students). **Be aware: the TI-89 is not allowed on some exams.**

Units Each unit will conclude with an exam. Homework will generally be collected on test days but is expected to be completed on a daily basis. A final cumulative exam will also be given at the end of the term. **This class requires maturity, commitment, and organization! It takes hard work to be successful.**

The following are you responsibility when it comes to homework …

1. Use your time wisely to work on calculus and to get help in class.
2. Correct your own homework (solutions online through Moodle).
3. Rework homework problems that you have done incorrectly so that you master concepts.
4. Ask Questions when something doesn't make sense.
5. Fully understand how to do each problem in the homework – exam questions are difficult.
6. Understand what you are doing and why you are doing it …more than just having it done.

Chapter 1 **A** review of many of the topics traditionally covered in Trig. and Alg. 2. Because of this, we will be covering material quickly. Topics include linear, exponential, logarithmic, and trigonometric functions.

Chapter 2 Foundational tools of calculus including limits and continuity, algebraic rates of change, and analysis using tangent lines.

Chapter 3 This is what calculus is all about. We will focus primarily on the algebra of differentiation and associated applications, primarily those associated with object motion. From this chapter on, all material is new.

Chapter 4 Examining derivatives from a graphical perspective. We will use this to lead us into some interesting applications including optimization and analysis of objects in simultaneous motion.

Chapter 5 Begins the 2nd half of the course: integration. We will begin by estimating areas enclosed by curved shapes by slicing them into a large number of skinny rectangles and then adding up the areas of those rectangles. We will formalize this idea by defining definite integrals and antiderivatives.

Chapter 6 **C**overs the algebra of integration. Once these techniques are learned we will move towards applying these techniques primarily with regards to exponential growth and decay.

Chapter 7 Applying what we have learned to geometric objects in 2-space and 3-space. For example, we might find the volume of an object with curved surfaces such as a bell.

(more on back)

Grading

Percentages

92 – 100 A	78 – 79 C+
90 – 91 A-	72 – 77 C
88 – 89 B+	70 – 71 C-
82 – 87 B	65 – 69 D
80 – 81 B-	< 65 Failing

Quarter Grades

70% Exams
30% Homework, Quizzes, & anything!

AP Preparation While I cannot require a student to take the AP exam, my expectation is that you will. The exam varies in price from year to year, but keep in mind that a good score on this exam can often mean credit on your college transcript. For those of you who wish to take the AP exam, there will be after school prep sessions available in the weeks leading up to the exam (or you may have registered for the AB Enriched course … a course I highly recommend taking). **It is very difficult to pass the AP exam as it requires much preparation … start today and remain committed every day throughout the year!**

Extra Credit Extra credit is not normally offered. If it is, it will be teacher initiated and offered to the entire class.

Benchmark Exams: Benchmark Exams may be given throughout this course. Benchmark exams cover crucial concepts and require at least 85% to pass. Grades on benchmark exams are determined by the number of times it takes you to pass the exam. This will be explained further in class.

Tardies Simple: be in your seat, checking homework, copying notes, and ready to begin class when the bell rings. If you are not ready when the bell rings you may be marked tardy.

Cell Phones Cell phones should only be used when the teacher allows them. There will be times where a cell phone will be allowed to access the internet (for using our Moodle website). If a student is not using the phone for the intended purpose, that student may receive a referral or have the phone confiscated.

The use of a cell phone/unauthorized electronic device during a period where an assessment is given (test, quiz, etc.) will be considered cheating regardless of the intention, resulting in a zero for the assessment and referral to the office for possible disciplinary action.

Need Help?

1) **Form a *study group*** - Get together with some friends and spend some time helping each other. You learn best when you teach something! Besides, if done right, you'll learn more and have more fun than being frustrated & alone.

2) **Mr. Henderson** – I am usually at school by 7:00 and stay until about 3:00. I do advise multiple school clubs and may not be available some days. Please check with me.

3) **Course Website:** http://moodle.anoka.k12.mn.us – this is where the party is at!

Parents Please read through this information and feel free to let me know if you have any questions or concerns. Encourage your child to see me if they need help**.** I regularly post scores online and invite you to access your child's progress throughout the semester.

Email: Matthew.Henderson@anoka.k12.mn.us
Phone: 763-506-8468

I have read and understand the policies of Mr. Henderson's class:

Student Name (printed) _____

Student Signature _____

Parent Signature _____