AP CALCULUS (AB)

(Mr. Henderson & Ms. Tverberg)

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 May. **To earn college credit, expect to do college level work! This will 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. Your teachers are very experienced with any TI-83 or TI-84 series calculators. The TI-89 is an acceptable calculator but your teachers have less experience with it (but are 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 be self-assessed 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 your 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 topics covered in Advanced Algebra and Pre-Calc. 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.

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

Chapter 5 Begins the 2nd half of the course: integration. We will estimate 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 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 – 79.99	C+
90 – 91.99	A-	72 – 77.99	C
88 – 89.99	B+	70 – 71.99	C-
82 – 87.99	B	65 – 69.99	D
80 – 81.99	B-	< 65	Failing

Quarter Grades

70% Exams
30% Benchmarks & Quizzes

AP Preparation While I cannot require a student to take the AP exam, our expectation is that you will. A good score on this exam can earn college credit. For those of you who take the AP exam, after school prep sessions will be available prior to the exam (in addition to the Seminar course). **It is very difficult to pass the AP exam as it requires much preparation … start today and remain committed every day throughout the year!**

Missing Work? Homework is expected to be completed before taking benchmarks & exams. Missing benchmarks/exams or unpassed benchmarks should be retaken within 2-3 days.

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

Exams: Benchmark Exams are given throughout this course. Benchmark exams cover specific crucial concepts and require at least 85% to pass. Grades on benchmark exams are determined by the number of times it takes to pass and will be explained further in class. Retakes are not given on unit exams; however, there is one optional cumulative exam at the end of the trimester that can be use to replace one exam score.

Homework Homework is assigned daily and should be completed daily with solutions posted in Moodle. It is the student's responsibility to be checking work and understanding concepts. Teachers are available for help when needed. Students will evaluate their homework progress through self-assessment. Homework is not a factor in the student's grade; however, the understanding of homework is critical!

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) **Your Teacher** – Teachers are at school from 7:10 until 2:50. Check with your teacher on their individual schedules for exceptions.

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

Parents Please read through this information and talk with your student's teacher if you have any questions or concerns. Encourage your student to seek help if needed**.** Teachers regularly post grades online and invite you to access your student's progress throughout the semester.

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I have read and understand the policies for AP Calculus AB:

Student Name (printed) _____

Student Signature _____

Parent Signature _____