

AP CALCULUS (BC)

Mr. Johnson – E110

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- 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 how to handle challenging mathematical situation, and to earn college credit while still in high school. The course culminates with the AP Calculus BC exam in the spring which can be used for college credit if you earn a high enough mark. **To earn college credit, expect to do college level work!**
- Textbook** Calculus: Graphical, Numerical, Algebraic (Finney, Demana, Waits, Kennedy, 3rd Edition)
- Materials** Bring your textbook, notebook, pencils, and a graphing calculator every day. The preferred calculators for this course are the TI-89, TI-83, and TI-84.
- Units** Each unit will conclude with an exam. After each exam day, we will typically follow up with analysis of the exam from an AP perspective. Homework will be assigned as we move through the course and students will be asked to reflect upon their efforts at the conclusion of each unit. Homework is expected to be completed in a timely manner so that we can have class discussions that are meaningful for all students. There will be several concept quizzes and/or mid-unit tests will occasional be given. Concept quizzes may be retaken as often as necessary to master a concept and the highest score will be used. Unit exams may be taken only one time. The course will conclude with a final exam which will mirror an actual AP exam. **This class requires a great deal of maturity and persistence for students to be highly successful! My goal for all students is to achieve a 5 on the AP exam in the spring.**
- It is important that you use your time wisely in this course. It is your responsibility to check, analyze, and question your homework. This includes checking your answers with the answer keys and with your classmates. It is a good idea to rework incorrect problems! How does it benefit you to get problems wrong and do nothing about it? Ask questions and insist upon a complete understanding of how to do each problem in the homework. Remember, the goal of each assignment is to understand what you are doing and why you are doing it ... not merely to get it finished.
- Unit 1** We will begin this course by taking some time to review material previously learned in Calculus 1. My expectation is that by the end of this unit, you will be up to speed on your AB Calculus topics.
- Unit 2** There are several topics in Chapters 1 through 7 that are not part of the ‘AB’ portion of the course and so they will have not received large amounts of attention to this point. Among these are Integration with the Chain Rule, Integration by Parts, Logistic Differential Equations, Euler’s Method, Volumes using Cylindrical Shells, and Arc Length analysis.
- Unit 3** We now hit our first unit containing mostly new material. Included in this chapter will be L’Hopital’s Rule for Limits, Relative Rates of Growth, Improper Integrals, Integral Tables, and Partial Fractions.
- Unit 4** We will now begin to examine topics that will expand our knowledge of calculus to a new level. So far, we have focused on the basics of integration and differentiation. Here we will primarily examine Power Series, Taylor Series, Remainder Theorem, and Convergence Testing.
- Unit 5** Students may have familiarity with parametric equations, vectors, and polar equations through exposure to them during other courses. We will now see how calculus applies to these topics. For example, we might use parametric equations and calculus to calculate the area of a complex closed curve.
- Unit 6** We will spend much of the remainder of the course doing preparation for an actual AP Calculus BC exam which will take place on Tuesday, May 15. Note that successful work on the AP exam can potentially give students AP credit for BC Calculus. This is the most critical and intense portion of the course. Our in-class final exam will take place over several days during the final week of Trimester 2.

Grading**Percentages****Trimester Grades**

93 – 100	A	77 – 79.99	C+
90 – 92.99	A-	73 – 76.99	C
87 – 89.99	B+	70 – 72.99	C-
83 – 86.99	B	60 – 69.99	D
80 – 82.99	B-	0 – 59.99	F

80% Exams and Quizzes
20% Final Exam

AP Preparation

While I cannot require a student to take the AP exam, my expectation is that you will take it. A good score on this exam can often mean credit on your college transcript which carries significant financial value. This course will end after Trimester 2 so there will be prep sessions during Trimester 3 to help get ready for the actual AP exam in May. **It is very difficult to pass the AP exam without putting in the time and effort to properly prepare!**

Tardies

Simple: Be ready to go when the bell rings. If you are not ready when the bell rings you may be marked tardy.

Cell Phones

Cell phones may be used in class to access the solutions manual or other relevant online resources. Please be aware that cell phones or any other device with internet capabilities must not be used during any exam.

Need Help?

- 1) **Form a study group** - Get together with some classmates and spend some time helping each other. You learn best when you teach something to someone else! You'll likely learn more and have more fun this way than being frustrated & alone.
- 2) **Mr. Johnson** – I am usually in the building by 7:00 and here until about 3:45. Be aware that I occasionally have meetings and may not be available. I am also often in Husky House in the IMC after school. My availability will be posted on the board each week. Feel free to access help as well during WIN time.
- 3) **Course Website** – Posted class notes and worksheets are available online through my home page which can be accessed through the Andover HS website. I expect that you will access these resources if you are absent. The user name is johnson and the password is johnson777 if at any point you are prompted to log into a page.

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. Online scores will be readily available and I ask that you contact me any time you have concerns.

Email: ernie.johnson@anoka.k12.mn.us

Phone: 763-506-8472

I have read and understand the course information for Mr. Johnson's class:

Student Name (printed) _____

Student Signature _____

Parent Signature _____

Date _____