SYLLABUS FOR ADVANCED PLACEMENT CALCULUS AB
Douglas Anderson School of the Arts – Mrs. Gulamali (Sloss)

COURSE DESCRIPTION AND PREPARATION:
Calculus is the branch of mathematics that deals with limits, derivatives and integrals. Before studying calculus, all students are required to have taken Geometry Honors, Algebra II Honors and Precalculus. Students must be very familiar with the study of functions; specifically the properties of functions, the algebra of functions, and the graphs of functions. Types of functions include linear, polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric, and piece-wise defined. Advanced Placement Calculus AB is a college-level Calculus I course offered for high school students. In early May, all students will take a national standardized exam, the successful completion of which may allow them to place out of first year calculus at many colleges and universities.

COURSE GOALS:
At the completion of this course students should be able to:
- work with functions represented numerically, graphically, analytically, or verbally.
- understand the meaning of the derivative as representing a rate of change as well as the slope of the tangent line to a function at any point on the curve of the graph of that function, and they should also be able to use the derivative to solve a variety of problems.
- understand that integration is the inverse of differentiation, as expressed in the Fundamental Theorem of Calculus; and know that the definite interval is the limit of Riemann sums as well as the net accumulation of change; and be able to use integration to solve a variety of problems.
- use appropriate technology to help solve problems, interpret results and verify conclusions.

TEXTBOOK:
Finney, Ross L., Franklin D. Demana, Bert K. Waits, and Daniel Kennedy. *Calculus: Graphical, Numerical, Algebraic*. 4th ed. Prentice Hall, 2012.
Students are also strongly advised to purchase an AP Calculus exam prep book for additional practice.

ONLINE TEXTBOOK:
An online version of the textbook is available at www.phschool.com using Web Code aze-0646

COURSE OUTLINE:
FIRST QUARTER:
- Chapter 2 – Limits and Continuity
- Chapter 3 – Derivatives
- Chapter 4 – More Derivatives

SECOND QUARTER:
- Chapter 5 – Applications of Derivatives
- Chapter 9 – L'Hopital's rule
- Chapter 6 – Estimating Area

THIRD QUARTER:
- Chapter 6 – The Definite Integral
- Chapter 7 – Differential Equations
- Chapter 8 – Applications of Definite Integrals

FOURTH QUARTER:
- AP Exam Review
- AP Exam: Tuesday, May 14 at 8:00 am

COURSE MATERIALS:

Students are expected to have a notebook, ruler, graph paper, and a graphing calculator. The TI-84+ CE graphing calculator is strongly recommended and will be used for classroom demonstrations. It cannot be stated strongly enough that a graphing calculator is necessary for this class. All course materials as well as the textbook and writing utensils should be brought to class every day.

EXTRA HELP:

Extra help is available during Lunch and Learn. In addition, student tutors are available through the school's National Honor Society. Students should come prepared with specific questions – tutoring time will not be devoted to re-teaching class material, even for students who have been absent from class

STUDENT EVALUATION/HOMEWORK:

Students will be evaluated by a variety of methods in this class, including the following types of assignments.
1. Homework will be assigned daily and occasionally graded in the following ways:
    a. Completion
    b. Responses to specific problems collected and graded for accuracy
    c. Homework quizzes
2. MathXL assignments graded for accuracy.
3. Regular classroom exams and quizzes.
4. Cumulative exams given at the end of each quarter. This exam will count as a test grade and will replace the lowest test grade for the quarter.
5. Free Response and Multiple Choice questions taken from AP Calculus exams from previous years.
6. At least one complete practice AP Calculus AB exam given in an exam setting.

A student's grade in the class will be assessed on a point system, which is the percentage of points achieved out of the total possible points. The county grading scale is as follows: 90 – 100 % = A; 80 – 89 % = B; 70 – 79 % = C; 60 – 69 % = D; 0 – 59 % = F. Students will receive a progress report at each mid-quarter. Student grades are also available at any time for students or parents from any Internet-capable computer on Focus.

MAKE-UP POLICY:

Regular attendance in this or any class is ABSOLUTELY VITAL. As always, **make-up work remains the FULL responsibility of the student!** County policy states that make-up work due to absence is due the number of days absent following the student's return. Exams and assignments announced in advance will be taken and are due on the announced date regardless of a student's attendance prior to the date. **Missing a review the class period prior to a test date does NOT excuse a student from taking a test.** It ALWAYS remains the responsibility of the student to determine what work has been missed and to complete the make-up work. An extended absence due to illness should be confirmed with the Guidance Office so that makeup work can be delivered to the student.

CONTACT INFORMATION:

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E-mail should be used for quickest communication – phone/voice mail is NOT recommended.
Website: www.MrsGulamali.com
Planning/Conference Time: Periods A3 and A4 – Conferences should be scheduled only through the Guidance Office