Grading Scale:

A	94-100	C	73-76
A-	90-93	C-	70-72
B+	87-89	D+	66-69
B	83-86	D	61-65
B-	80-82	D-	55-60
C+	77-79	F	0-54

AP Calculus (BC) is a rigorous, high level, daily math course designed to improve individual student math abilities and to prepare students for high level college level mathematics. The main goal of AP Calculus (BC) is to learn Calculus and prepare for the AP Calculus (BC) Exam in May 2013. This course requires a diligent effort and continual determination by students. Passing the AP exam is a great goal and accomplishment. A score of 5 (highest) on the exam is outstanding and relatively rare. Students can pass the exam with a score of 3, 4 or 5 while a score of 1 or 2 are not passing scores. A passing score may give the student 2 full semesters of college credit. However, some engineering programs expect a score of 5 to count for the 2 full semesters. Contact your specific college for details. The test will also give the student a sub-score for the AP Calculus (AB) part which can give them college credit for 1 semester. The class will also prepare students who do not take or pass the exam for the first semester Calculus course at most colleges and universities. This course will prepare those who score well on the exam to move into the third semester of Calculus at college. A graphing calculator is required and some models are not allowed on AP testing (See AP Central). I recommend the TI-84 Plus since this is what I will use for class demonstrations. The TI-82, TI-82 Plus, TI-83, and TI-83 Plus can also do most things that we will need.

AP Calculus (AB) students should have taken PreCalculus in the school year just preceding AP Calculus.

Students are expected to treat others with respect and dignity and not disrupt the educational process. Students are expected to enhance the learning process by encouraging others and themselves to do their very best each day. Students are expected to follow Springville High School and Nebo School District policies (See the student handbook). Food, candy, gum, drink, hats, bandanas, toys, cards, i-pods, i-pads, cell phones or other electronic devices are not allowed in the classroom. These items will be confiscated, if used in the classroom during any part of the entire class period.

Grading:

*Attendance 10%--*Daily attendance is essential in learning mathematics and doing well. The District DAF is used to account for this part of the grade. Any unexcused absences or tardies must be made up and recorded in the office by 3 pm on the last day of the term; otherwise, these will lower a student's final grade.

*Daily Assignments and Lab Activities 20%--*Assignments are "on-time"at the beginning of any class period in which they are due. They receive 3 scores—raw score, decimal score to 3 places, and a score out of 10. They are checked by the student prior to class. "On-time" assignments receive 1 extra bonus point. If a student does not have an assignment ready on the "on-time" date they may wait until the "deadline date" and turn the assignment in, after scoring it, by 3 pm. After the "deadline date" late assignments are worth, at most, 4 out of 10 points, if completed. Missing assignments from a previous chapter are due within one week of the next chapter test.

Each problem needs to be written from the book and then solved with reasonable steps (the only exceptions would be word problems and graphing picture problems). Problems shown in notes during class should also be rewritten on the assignment as well.

*Notes 20%--*Daily notes are taken. Notes are due at the beginning of class on the (first sitting) day of the test for those notes. Late notes receive 25% deduction, if late, on the day of the test or by the end of the next school day; otherwise, there is a 50% deduction for late notes after these 2 days.

*Tests and Quizzes 50%--*There will be periodic quizzes during the term and each may be taken only once, so study well. Each quiz may be taken early or with the class, but not late. Quizzes come in groups of 3 quizzes and the lowest quiz of the 3 will be dropped (provided the student gives service tutoring per term—contact the teacher for more details) and the two remaining quizzes will be averaged together to make a test score. At the end of the term, the lowest test score will be dropped (provided the student gives service tutoring per term—contact the teacher for more details) excluding the Derivative Final Test or the Integral Final Test—these two tests occur in the 3rd and 4th terms but are never dropped for any reason. Unexcused absences on a test or quiz day result in zero credit on a quiz or forfeit a test sitting. Students will have one day in class to take a test and two additional sittings before or after school to finish the test. Students who do not prepare and use the full time on the first sitting will forfeit their third sitting on the test. Students may not take test material out of the room in any physical or

electronic method. However, they may use their memory of the test to make adjustments to the test on future sittings. The goal is to learn Calculus and prepare for college and the AP Calculus test. Make-up tests must be arranged with the teacher. Make-up tests taken after school must be started by 3 pm on M, T, Th and F. On early out day students may return at 3 pm to take their tests, but may not do their tests immediately after school because of the PLC meetings. There will be a Derivative Final Test and an Integral Final Test. Students are expected to show correct supportive work for any solution on a test and place appropriate rounding and units on answers.

AP Calculus Textbook: Calculus AP Edition, 3rd Edition, Pearson/Prentice Hall, Finney, Demana, Waits and Kennedy

Tentative Schedule and AP Calculus Standards:

Term 1: Chapter 2 Limits and Continuity: Students will be able to evaluate and solve problems with rates of change and limits, limits involving infinity, continuity, and slopes of tangent lines.

Part of Chapter 3 Derivatives: Students will be able to solve problems with derivatives by definition and shortcuts, define and understand differentiability, learn and use the shortcut rules of differentiation, and analyze concepts of instantaneous rates of change involving position, velocity, acceleration, and jerk. Students will be able to find and use derivatives of Trigonometric Functions, Chain Rule, Implicit Differentiation, Derivatives of Inverse Trigonometric Functions, and Derivatives of Exponential and Logarithmic Functions.

Part of Chapter 4 Applications of Derivatives: Students will be able to solve and apply derivatives to a wide variety of applications in industry, business, engineering, medical and science by using the Extreme Values Theorem, Maximum and Minimum, Mean Value Theorem, Optimization and Modeling, Linearization, Related Rates and connecting the first and second derivatives to the original function as well as analyzing points of inflection.

Term 2: Chapter 5 The Definite Integral: Students will determine approximations of definite integrals by using finite sums and rectangle approximation methods and Reimann Sums, Simpson's Rule and the Trapezoidal Rule. Furthermore, they will eventually learn to calculate and evaluate basic definite integrals, indefinite integrals, and antiderivatives. The chapter culminates in the greatest mathematical computational discovery-The Fundamental Theorem of Calculus.

Chapter 6 Differential Equations and Mathematical Modeling: Students will learn to make and evaluate Slope Fields, Euler's Method and perform anti-differentiation by Substitution and Integration by Parts techniques. Also, students will examine and gain competency in solving application problems that relate to the Law of Exponential Change which helps to evaluate Growth and Decay models. Students will learn how to solve and analyze Logistic Growth Models.

Chapter 7 Applications of the Definite Integral: Students will evaluate and solve problems that find Integral values as Net Change, Areas in the Plane and Volumes using Disk,Washers, and Shell Methods Methods. Students will also use integration to calculate lengths of curves and they will also solve application problems in Science and Statistics.

Term 3: Chapter 8 Sequences, L'Hopital's Rule and Improper Integral: Students will evaluate and analyze sequences, evaluate indeterminate forms using L'Hopital's Rule, solve relative rates of growth problems and solve improper integrals.

Chapter 9 Infinite Series: Students will identify and learn about Power Series and learn how to solve problems using Taylor Series, Taylor's Theorem with the Remainder Estimation Theorem and evaluate the radius of convergence and convergence both in an interval and at endpoints , using things like the nth term test, Ratio Tests, Integral Test, Comparison Tests and other methods. Part of Chapter 10 Parametric, Vector and Polar Functions: Students will learn how to graph, evaluate, and analyze Parametric functions and their derivatives while also finding arc length.

Term 4: Chapter 10 Parametric, Vector, and Polar Functions: Students will learn how to graph, evaluate, and analyze vectors and their models along with polar function curves. Vectors will be applied to velocity, acceleration, speed, displacement and distance traveled. Students will be able to find derivatives of Vectors and Polar Functions while finding areas in polar graphs.

Review for the AP Test.
AP Calculus (BC) Test—May 2013
Additional Topics.
I have read the course description and disclosure document.
Student Name (Please Print):_____
Student Signature:_____ Date:_____
Parent Signature:_____ Date:_____