

Syllabus--AP Calculus (BC) Procedures

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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 mathematics course designed to improve individual student math abilities and to prepare students for advanced level college mathematics. The main goal of AP Calculus (BC) is to actually learn Calculus well (equivalent to the second semester level in college) and to prepare students for the AP Calculus (BC) exam in May 2017. The course requires a diligent, consistent effort by each student as they progress and prepare. Passing the AP Calculus (BC) exam is a great goal and a fantastic accomplishment. A score of 5 is the highest possible and this score equates to passing the course in college with an A or A- grade. This is often the minimal requirement for some college engineering programs. Please check the college of your choice for details. A score of 4 is equivalent to a B+, B- or B college grade and a score of 3 is equivalent to a C+ or C grade in college. A score of 3 or higher will prevent a student from having to take Pre-Calculus level mathematics in college (College Algebra and Trigonometry) and usually satisfies most college general math requirements. A score of 1 or 2 is not considered a passing grade so no credit is given for these.

While each student should strive to prepare well and plan to take the AP Calculus (BC) test in May, some students, for various reasons, may opt not taking the exam. This course will prepare those who score a 5 to go on and take the Multi-variable Calculus course and Linear Algebra course in college. A graphing calculator is required and most models are allowed on AP testing. I recommend the TI-84 Plus since it is a good calculator and this is what I use in class. Students taking AP Calculus (BC) should have taken AP Calculus (AB) last year; otherwise, they may struggle. A student who has not taken AB Calculus must receive teacher approval to be in the BC course. Students taking AP Calculus (BC) should plan on taking the AP test in May. Students who do not have this goal in mind often begin to decrease their efforts in class and never do as well as they should. In order to prepare for the AP test students must complete and thoroughly understand their homework. This really sets a strong foundation to future understanding.

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 and website information). Food, candy, drink (with the exception of water in a clear plastic bottle with a cap for hydration), hats, bandanas, toys, cards, i-pods, i-pads, cell phones, or any other electronic devices, with the exception of the Graphing Calculator, 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 in class. The District DAF is used to account for this part of the grade. Any unexcused absence or tardy must be made up, excused, and recorded by 3 pm on the last day of the term; otherwise, these will lower the student's final term grade in the course. It is the parent/guardian and the student's responsibility to make sure this is completed.

Daily Assignments and Lab Activities 20%--Assignments are "on-time" at the beginning of any class period in which they are due. Each assignment is scored by the student with 3 scores at the top of the paper: First, the raw score. Second, the decimal score to 3 places to the right of the decimal. And, third, the score out of 10. They are checked by the student prior to class and turned in "on-time" to receive 1 additional bonus point. If the student is not ready to turn the paper in on the on-time date because they have more questions, they may see the teacher before or after school and then hand in the assignment to the teacher at the beginning of one of the next two class

periods or an end of the term deadline date, whichever comes first. Those who do not turn in their work by the start of the second class day will receive a reduction on their assignment score because it is now late. Late work will receive a 50% off penalty, if completed and turned in within 2 weeks. Late work is due within two calendar weeks of the date the assignment was given. Problems in the homework are expected to have work with reasonable steps shown. In other words, answers only is not appropriate work in most cases. Problems shown in notes during class, that also happen to be on the homework, are required to be written out in the homework as well. The point of an assignment is to practice problems and develop time for a student to absorb complicated mathematics.

Notes 15%- Daily notes are taken as we learn the material. All notes are to be written in a single notebook, in order, that will be handed in on test day. Notes are due at the beginning of class on the day of the test in a notebook. Late notes receive 25% reduction, if late, on the day of the test or 50% reduction after 2 more class periods have passed. Missed class notes can be found on-line and must be recopied in the student's own handwriting and then turned in before or after school to receive full credit.

Tests 40% and Quizzes 15%- Students will have one opportunity to take the test. Students may redo any problem missed on the test and recover **up to half of the missing points** by explaining and justifying their needed corrections, including the multiple choice questions. A test cannot be taken more than once. It is important for students to study well for tests. In fact, most calculus tests will check a student's ability to think, not just repeat problems they have seen before. Students must turn in the corrected work with justifications stapled to the front of the test within one week of the test being returned to them. Students may not take any test material physically or electronically out of the room until the test is returned to them. Each test counts as a 100 point test grade.

Quizzes may be taken early if a student is planning to miss class, but they may not be taken late. Quizzes are given over the previous class day's material and students are required to keep their best 10 quiz scores for the term. There will be a minimum of 14 quizzes per term. All other quiz scores will not be included in their grade and dropped at the end of the term. Students who are absent will drop that quiz unless taken early. Remember, the quiz grade is based off the ten best quizzes. Generally, a student will have 4 or 5 quiz scores to drop. Students are required to tutor other math students before or after school for 1 full hour each term in the Math Lab. This is done in order to drop their lowest test score of the term. Those helping are expected to be courteous, productive, and helpful to those they assist for one full hour; otherwise, no credit is given. I believe that those who can do math should give back to the community and tutoring their peers is a way to serve others with their talents.

The goal is to prepare students for the AP exam and for college level material. Any test taken after school must be started by 2:40 pm on T, W, Th, and F. No tests will be given on Monday afternoon due to collaboration. Students are expected to write down reasonable correct supportive work for any solution on a test, quiz or homework. Collections of bald answers only receive no credit. Students should place appropriate rounding or truncating and units on answers for full credit.

Parents: If you need to get your child out of class during school hours, then please contact the main office at SHS at 801-489-2870. The office will then call for them. I cannot release them to you at the classroom. It must be done through the main office. Please realize that texting or e-mailing your child during class time is disruptive to the educational process. In my class students are expected to put their cell phone away for the whole class period. Please help your son/daughter focus their attention on the difficult mathematics that requires their full attention. Cell phones being used during class will be confiscated. Thank you.

I have read the above disclosure document:

Parent Signature: _____ **Date:** _____

Student Signature: _____ **Date:** _____

Tentative Course Pacing Guide 2016-2017 AP Calculus BC- Calculus Extended

Assignment	I Can Statements
1 1-1: P. 4:1-57	I can evaluate trigonometric, limit, and continuity problems
2 1-2: P. 9:1-66 Graphing Adjustment Problems	I can solve more limits, continuity, Intermediate Value Theorem, and Graphing Adjustment Problems
3 1-3: P. 14: 1-44	I can solve and evaluate infinite limits, limits at infinity, and curves
4 1-4: P. 19:1-42	I can use the limit Definition of the Derivative with Alternate Form
5 1-5: P. 23:1-54	I can use differentiation rules, find tangent lines, analyze differentiability, and evaluate rates of change
6 1-6: P.28:1-35	I can evaluate position, velocity, and acceleration and use calculator
7 Unit 1 Test	
8 2-1: P. 34: 1-39	I can use product rule, quotient rule, and Trigonometric rules
9 2-2: P. 38: 1-29	I can evaluate using the Chain Rule
10 2-3: P. 41: 1-37	I can use Implicit Differentiation
11 2-4: P. 45:1-24	I can solve related rate story problems
12 2-5: P. 50:1-40	I can find extrema and use the Mean Value Theorem
13 2-6:P. 53:1-35	I can evaluate increasing/decreasing and the First Derivative Test
14 Unit 2 Test	
15 3-1:P. 60:1-30 Derivative Test	I can evaluate concavity, find Points of Inflection, and use the Second Derivative Test
16 3-2:P. 63:1-28	I can curve sketch with extrema and points of inflection
17 3-3:P. 67:1-29	I can graph derivatives and antiderivatives from graphs
18 3-4:P. 70:1-21	I can solve optimization story problems
19 3-5:P. 74:1-30	I can approximate with tangent lines
20 3-6:P. 79:1-39	I can evaluate, find, and use antiderivatives to problem solve
21 Unit 3 Test	

22	4-1:P. 85: 1-38	I can reverse the Chain Rule and use U-substitution
23	4-2:P. 90:1-34	I can solve definite integrals (The Fundamental Theorem of Calculus), and solve with calculator integration
24	4-3:P. 94:1-32	I can solve with FTC and analyze Rate Graphs, and find Average Value of a Function
25	4-4:P. 99:1-29	I can approximate using Reimann Sums and Trapezoids
26	4-5:P. 105:1-29	I can find the area between curves
27	4-6:P. 111:1-33	I can evaluate volumes with known cross sections (including disks and washers)
28	Unit 4 Test	
29	5-1:P. 118:1-39	I can find volume with the Shell Method, and calculate arc length
30	5-2:P. 123:1-49	I can solve derivatives and integrals of exponential functions
31	5-3:P. 127:1-45	I can find derivatives of inverse functions
32	5-4:P. 134:1-47	I can find derivatives of logarithmic functions
33	5-5:P. 138:1-36	I can integrate using natural log functions
34	5-6:P.143:1-34	I can solve differential equations and exponential growth and decay problems
35	Unit 5 Test	
36	6-1:P. 153:1-34	I can evaluate and solve slope fields and use Euler's Method
37	6-2:P. 160:1-36	I can find derivatives and integrate inverse trig. Functions
38	6-3:P. 164:1-33	I can integrate products using integration by parts
39	6-4:P. 166:1-34	I can solve partial fractions and mixed integration problems
40	6-5:P. 169:1-33	I can solve and evaluate logistic equations
41	6-6:P.174:1-44	I can solve indeterminate limits with L'Hopital's Rule
42	Unit 6 Test	
43	7-1:P.180:1-34	I can evaluate improper integrals
44	7-2:P.183:1-49	I can solve, evaluate, and analyze sequences

- 45 7-3:P.187:1-44 I can find if a series converges or diverges, evaluate Geometric Series, and analyze with the nth term test
- 46 7-4:P. 190:1-39 I can recognize Power and Geometric Series, evaluate each, and integrate and differentiate Power Series
- 47 7-5: P. 196:1-34 I can use and evaluate with Taylor Series
- 48 7-6:P200:1-45 I can evaluate and analyze Elementary Series and Alternating Series
- 49 Unit 7 Test
- 50 8-1:P. 205:1-26 I can find and evaluate error approximations and error bounds
- 51 8-2:P. 210:1-37 I can evaluate with the Integral Test and the p-Series Test
- 52 8-3:P. 214:1-29 I can use and evaluate with the Direct Comparison Test, and the Limit Comparison Test
- 53 8-4:P. 218:1-26 I can use the Ratio Test
- 54 8-5:P. 221:1-17 I can find the interval and radius of convergence (by the Ratio Test)
- 55 8-6:P. 223:1-33 I can analyze absolute vs. conditional convergence
- 56 Unit 8 Test
- 57 9-1: P. 228:1-34 I can analyze parametric equations with new and previous calculus techniques (derivatives and integrals)
- 58 9-2:P. 233:1-33 I can analyze polar equations with new and previous calculus techniques (derivatives and integrals)
- 59 9-3:P.236:1-21 I can evaluate area in Polar Curves
- 60 9-4:P.238:1-21 I can find Polar Arc Length and solve with Vector Definitions
- 61 9-5:P.242:1-11 I can evaluate and analyze Calculus of Vector-Valued Functions
- 62 9-6:P.244:1-15 I can review parametrics, polar, and vector related functions with their added Calculus analysis
- 63 Unit 9 Test

Review for the AP Calculus BC Test for several class periods and homework.

AP Calculus BC Test—Tuesday, May 9, 2017

Following the AP Test we will complete additional topics in Calculus and Applied Mathematics