

## Syllabus--AP Calculus (AB) Procedures

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Room C-14

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

AP Calculus (AB) is a challenging, high level mathematics course designed to improve individual student math abilities and to prepare students for college level mathematics. The main goal of AP Calculus (AB) is to actually learn Calculus well (equivalent to the first semester level in college) and prepare students for the AP Calculus exam in May 2017. The course requires a diligent, consistent effort by each student as they progress and prepare. The AP Test requires that students can work quickly, remember concepts, apply concepts and basically take tests well. Passing the AP Calculus (AB) 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 can be 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 (AB) test in May, some students, for various reasons, may opt not taking the exam. This course will prepare those who score a 4 or 5 to go on and take the next Calculus course in college depending on their personal level of confidence. A graphing calculator is required and some models are not allowed on AP testing (see the AP website for information ([www.apcollegeboard.com](http://www.apcollegeboard.com))). I recommend the TI-84 Plus since this is what I use in class. Students taking AP Calculus (AB) should have taken and done well in Math 3 Honors or Pre-Calculus last year as a prerequisite course; otherwise, they will struggle. Students taking AP Calculus (AB) 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 understand their homework**. This really sets a strong foundation for future understanding. Students who are good at rigorous math tests always have an advantage on the AP Calculus Test.

### **Classroom Behavior Expectations:**

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. They are not to do other coursework while in Calculus. Students are expected to follow Springville High School and Nebo School District policies (See the student handbook). 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 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.

**Parents:** If you need to get your child out of class during school hours, then please contact the main office at SHS or call 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. Also, 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.

### **Grading:**

**Attendance 10%-** Daily attendance is essential in learning mathematics and doing well in class. Missing AP Calculus is not advised. The work is very intense and challenging. The District DAF is used to account for this part of the grade. You will see a score out of 100 on the Aspire grade, but this is only 10% of the total grade. If there

are any unexcused absences or tardies, then your student's grade in this category will be shown below 100 points. Any unexcused absences or tardies must be made up and recorded through the school attendance secretary by 3 pm on the last day of the term; otherwise, these will cause a lower final term grade in the course. It is the responsibility of the parent/guardian and the student to take care of these absences and tardies in consultation with the school attendance office.

**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 before they come to class: 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. Students have until the beginning of two more class periods (or the deadline near the last day of the term, whichever comes first) following the "on-time" date to get their assignment finished and turned into the teacher. Anything after this is considered late. Late work will receive, at most, a score of 5 out of 10 points. 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. Answers **only** receive no credit. This is Calculus. Problems shown in notes during class, that also happen to be on the homework, are required to be rewritten out in the homework as well. Only a few problems are done just in a person's head. We want to see thought on the paper. The AP Test graders will expect to see mathematical thought organized and written on paper.

**Notes 15%**- Daily notes are taken as we learn the material. Class notes are to be written completely in a single binder or notebook as they are shown in class, not just summarized. Notes are due at the beginning of class on the day of the test, in a binder or notebook, in order. Late notes receive 25% reduction, if late, on the day of the test or 50% reduction after 2 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 on test day to receive full credit.

**Tests 40% and Quizzes 15%**- Students will have one opportunity to take the test. Students may redo problems missed on the test and recover up to half of the missing points by explaining and justifying their needed corrections. 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 given back to all students. Each test counts as a 100 point test grade. The goal is to prepare students for the AP exam and for college level material. Any make-up test taken after school must be started by 2:40 pm on T, W, Th, and F. Monday is collaboration this year. Students are expected to write correct supportive work for any solution on a test, quiz or homework. Students should place appropriate rounding or truncating and units on answers for full credit. Students who help in the math lab each term for one hour will receive the ability to drop their lowest test score of the term. Students are required to tutor other math students in the math lab before or after school for 1 full hour each term. Those helping are expected to be courteous, productive, and helpful to those they assist for one full hour; otherwise, no credit is given. Calculus students should serve others and give back to the community. The goal in AP Calculus is to prepare students for the AP exam and for college level material. Daily quizzes will be given at the start of most class periods. The best 10 quiz scores will be kept at the end of the term. There will be at least a minimum of 14 quizzes in a term. They are short and time is limited on them. Any quiz missed cannot be made up, but it could be dropped at the end of the term. As long as there are at least 10 better scores. Students who miss class often will have difficulty in Calculus. It is not like easier math courses. Students who miss class or are late and miss the quiz will not be able to re-take the quiz. Students who have a school activity on a particular day or other planned activity can make arrangements with the teacher and take their quiz early. Quizzes are not given late.

AP Calculus Textbooks: The Essentials of Calculus 2015 by J. Michael Shaw & Gary L. Taylor  
and for a reference book Calculus AP Edition, 3<sup>rd</sup> Edition, Pearson/ Prentice Hall; Finney, Demana, Waits, and Kennedy.

I have read the above disclosure document:

Parent Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## 2016-2017 Tentative AP Calculus AB Pacing Guide (Scope and Sequence) and I Can Statements

<b>Day:</b>	<b>Section:</b>	<b>Assignment:</b>	<b>I Can Statement:</b>
1	1-1	P.2: 1-27	<i>I can evaluate slopes, line equations, and use a calculator</i>
2	1-2	P. 7: 1-36	<i>I can analyze and evaluate functions, inverses and make graphing adjustments.</i>
3	1-3	P. 12: 1-45	<i>I can find intercepts, analyze symmetry, evaluate even/odd functions, finding intersections of functions.</i>
4	1-4	P. 15: 1-47	I can evaluate limits and continuity
5	1-5	P. 19:1-48	I can review and prepare for the Unit 1 Test
6	Unit 1 Test		
7	2-1	P. 22:1-51	I can solve more limits, more continuity, and use the Intermediate Value Theorem.
8	2-2	P. 25: 1-53	I can evaluate and solve infinite limits
9	2-3	P. 30: 1-30	I can curve sketch and find limits with respect to end behavior, asymptotes & holes, and intercepts.
10	2-4	P. 33:1-23	I can memorize, use and evaluate using the limit definition of the derivative and also use its alternative form of the limit definition.
11	2-5	P. 37:1-48	I can memorize and use derivative rule (short cuts), find tangent lines, evaluate nondifferentiability, and find rates of change.
12	2-6	P. 40:1-68	I can review Unit 2 and prepare for the Unit 2 test.
13	Unit 2 Test		
14	3-1	P. 45: 1-18	I can analyze and evaluate problems relating to position, velocity, and acceleration.
15	3-2	P. 48: 1-29	I can the product and quotient differentiation rules and find derivatives with my calculator.
16	3-3	P. 50: 1-23	I can solve with chain rule and the general power rule.

17	3-4	P. 53: 1-25	I can solve with implicit differentiation.
18	3-5	P. 56:1-19	I can solve related rate problems.
19	3-6	P. 59:1-26	I can review and prepare for the Unit 3 Test.
20	Unit 3 Test		
21	4-1	P. 63:1-30	I can evaluate and find absolute and relative extrema and use the Mean Value Theorem.
22	4-2	P. 66:1-29	I can analyze where functions increase and decrease and use the First Derivative Test for Relative Extrema.
23	4-3	P. 70:1-24	I can determine concavity, points of inflection by using the Second Derivative Test for Relative Extrema.
24	4-4	P. 73:1-24	I can sketch curves using extrema and points of inflection.
25	4-5	P.76:1-26	I can graph derivatives and antiderivatives from graphs.
26	4-6	P. 79: 1-27	I can review and prepare for the Unit 4 Test.
27	Unit 4 Test		
28	5-1	P. 82:1-11	I can solve Max./Min. (Optimization) Application problems.
29	5-2	P. 84:1-17	I can solve more Optimization Application problems.
30	5-3	P. 86:1-23	I can approximate with tangent lines.
31	5-4	P. 92:1-28	I can use antidifferentiation and solve indefinite integrals.
32	5-5	P. 97:1-30	I can evaluate using the general rule for integrals and use U-substitution.
33	5-6	P. 101:1-24	I can use the Fundamental Theorem of Calculus, solve definite integrals, and use calculator integration.
34	5-7	P.105: 1-33	I can review and prepare for the Unit 5 Test
35	Unit 5 Test		
36	6-1	P. 110: 1-24	I can use the Second Fundamental Theorem of Calculus and interpret "Rate" graphs.

37	6-2	P. 114:1-27	I can evaluate Reimann Sums
38	6-3	P. 117: 1-22	I can use the Trapezoidal Rule
39	6-4	P. 122:1-21	I can find area between curves and find average values.
40	6-5	P. 125:1-27	I can find volumes of solids with known cross sections.
41	6-6	P. 129:1-21	I can find volumes of solids of revolution with discs and washers.
42	6-7	P. 132:1-39	I can review and prepare for the Unit 6 Test
43	Unit 6 Test		
44	7-1	P. 136:1-40	<i>I can analyze and evaluate exponential functions.</i>
45	7-2	P. 139:1-33	I can differentiate and integrate exponential functions.
46	7-3	P. 143:1-32	I can evaluate derivatives of inverse functions.
47	7-4	P. 147:1-46	<i>I can analyze and evaluate logarithmic functions.</i>
48	7-5	P. 152:1-27	I can differentiate logarithmic functions.
49	7-6	P. 155: 1-32	I can integrate natural log functions.
50	7-7	P. 158:1-37	I can review and prepare for the Unit 7 Test.
51	Unit 7 Test		
52	8-1	P. 161:1-28	I can analyze, solve, and work with differential equations.
53	8-2	P. 164:1-18	I can solve, analyze, and work with exponential growth & decay.
54	8-3	P. 169:1-24	I can draw, analyze, and evaluate slope fields.
55	8-4	P. 173:1-33	I can evaluate indeterminant limits with L'Hopital's Rule.
56	8-5	P. 178:1-24	I can review basic trigonometric concepts.
57	8-6	P. 181:1-40	I can review and prepare for the Unit 8 Test.
58	Unit 8 Test		

- 59      9-1      P. 185:1-26      *I can graph trigonometric graphs and solve trigonometric analysis with a calculator.*
- 60      9-2      P. 188:1-39      I can differentiate trigonometric functions.
- 61      9-3      P. 192:1-34      I can integrate trigonometric functions.
- 62      9-4      P. 196:1-33      I can evaluate inverse trigonometric functions and then differentiate them.
- 63      9-5      P. 200:1-32      I can integrate inverse trigonometric functions.
- 64      9-6      P. 203:1-31      I can evaluate and review basic integration formulas for the Unit 9 Test.
- 65      Unit 9 Test
- 66      9-7      P. 206:1-22      I can evaluate integrals using other techniques.

AP Test Review days to follow

AP Test-Tuesday, May 9, 2016 at 8 am

AP Comprehensive Final Test

APPENDIX LESSONS AND ADDITIONAL TOPICS FOLLOWING THE AP TEST.