

Advanced Placement Calculus AB/BC

Kalani High School, School Year 2007–2008

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Objectives: Equivalent to a one-year course in the differential and integral calculus of a single real variable, this class will prepare you for advanced work in college-level mathematics. In particular, you will learn to:

- Work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal.
- Understand the meaning of the derivative in terms of a rate of change and local linear approximation, and use the derivative to solve a variety of problems.
- Understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change, and use the integral to solve a variety of problems.
- Understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.
- Communicate mathematics both orally and in well-written sentences, and explain solutions to problems.
- Model a written description of a physical situation with a function, a differential equation, or an integral.
- Use technology to help solve problems, experiment, interpret results, and verify conclusions.
- Determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement.
- Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

The AP exam is an integral part of the class, and will be the focus of much of our efforts, particularly during the fourth quarter. Thus, it is required and expected that you register for and take the AP Calculus exam in May.

Grading: Your grade will be computed quarterly, with all four quarters averaged to produce a final grade for the year. Averages greater than or equal to 90% will receive A's; those between 80% and 89% inclusive will receive B's; those between 70% and 79% inclusive will receive C's; those between 60% and 69% inclusive will receive D's; and those less than 60% will receive F's.

Quarterly grades are computed using a point system to include daily classwork, homework, and warm-up assignments; weekly assessments (quizzes and tests) and journal entries; bi-weekly or thrice-quarterly problems-of-the-week (POW's); and occasional projects and presentations.

Late Work: With the exception of daily in-class assignments, all work is due at the *start* of the class period. Assignments turned in after the start of the period will be considered late, and will be penalized by a factor of $(\frac{1}{2})^d$, where d represents the number of days after the deadline that the work is submitted. Assignments turned in up to one day late, for example, will be penalized by a factor of $(\frac{1}{2})^1 = \frac{1}{2}$, i.e., the assignment will be graded and the score then multiplied by $\frac{1}{2}$. Work turned in two days late will be penalized by a factor of $(\frac{1}{2})^2 = \frac{1}{4}$. Work turned in three days late will be penalized by a factor of $(\frac{1}{2})^3 = \frac{1}{8}$, and so on.

Absences: Occasional absences, whether planned or unplanned, are inevitable, and you will find that as long as you are proactive—you discuss things with me *before* your absence if possible, or *before* class on the day of your return if not—I am willing to be fairly flexible with deadlines.

If the absence is anticipated (field trip, athletic competition, doctor's appointment, etc.), you must make prior arrangements for all work that is due on the day of the absence to be turned in on that

day—give it to a friend, ask that it be put in my box in the main office, or submit it in person before you leave. Any tests or quizzes given on that day are expected to be made up by the end of the following day. Any tests or quizzes given on the following day are expected to be taken with the rest of the class.

If the absence is unanticipated (illness, accident, family emergency, etc.), you are expected to see me before class on the day that you return to make specific arrangements for completing missed work. As a general rule of thumb, you will have as many days to make up missed work as you were absent.

Remember that *you* are ultimately responsible for keeping track of your absences. You can check your absences either by viewing your grade report on my website or by setting up an account on the Kalani High School website (<http://kalanihs.k12.hi.us>).

Materials: In addition to a generous supply of pencils, erasers, and notebook paper, you will need to obtain a separate binder (or set aside a specific section in your binder) to store and organize all of your loose papers and assignments from this class. You will also need to obtain two spiral notebooks or composition books: one in which to write your journal entries, and one in which to take class notes and complete your homework assignments. Finally, you are required to obtain a graphing calculator from the College Board’s approved calculator list for use in school, at home, and on the AP exam itself.

Expectations & Consequences for Behavior: Please remember that this is *your* class. The behavior and participation of each person will shape the type of learning that will occur. Since one person’s behavior affects everyone else’s experience, I ask that all students assist with classroom management. In order to maintain a smoothly running and efficient classroom in which everyone has a chance to succeed, it is expected that you do the following while in class.

- Turn off, and securely stow all electronic equipment and accessories (with the exception of calculators).
- Refrain from eating, drinking, or gum chewing.
- Remain seated within the classroom for the duration of the period unless given permission by the teacher.
- Treat your teacher, your classmates, their possessions, and your surroundings with the same respect, consideration, courtesy, and decency with which you yourself wish to be treated.
- Listen carefully to all instructions before beginning work, and follow all instructions once work has begun.
- Abide by all other rules and regulations of Kalani High School and the Department of Education.

Those who choose not to meet these expectations can expect to have or to receive . . .

1. A reminder
2. A warning
3. Parents or guardians contacted
4. A disciplinary referral
5. When applicable . . .
 - (a) An outstanding obligation for lost, damaged, or destroyed school property
 - (b) Contraband articles confiscated
 - (c) Loss of the privilege of participating in, and receiving credit for an in-class activity

Extra Help: You are strongly encouraged to come in for frequent extra help as needed on an informal or formal basis. I am generally available during all non-instructional times of the day—before school, after school, during recess, and during lunch—but it is prudent to check with me beforehand to be sure that I will not be otherwise occupied. **Please be aware, however, that extra help is not intended to replace in-class effort and participation—the level of assistance you will receive outside of class will be dependent upon your attitude (positive), attentiveness (awake and alert), engagement (actively listening and taking notes), commitment (trying hard every day), and behavior (good) while in class.**

Expectations for Students Enrolled in AP Courses: Committed to equality of opportunity and excellence in achievement, the administration and faculty of Kalani High School seeks to make enrollment in Advanced Placement (AP) classes as widely available as possible. Enrolling in an AP class, however, is a commitment that must not be taken lightly and should only be made by those students who are fully aware of the responsibilities involved, and willing to fulfill them to the best of their ability.

So that students and their families will have a complete understanding of what will be expected of them, all students wishing to enroll in an AP course at Kalani High School must agree to comply with all of the following expectations.

- All students enrolled in an AP class at Kalani High School are required to take the applicable AP examination in May. Exam fees total approximately \$83.00 for each exam taken, with subsidies and fee waivers available for those students who are eligible for the Free and Reduced Lunch Program. A schedule of exams may be obtained online at <http://www.collegeboard.com>, or from the AP test coordinator in C-12.
- Students enrolled in an AP course for the 2007–8 school year will have 48 hours in which to withdraw should they find themselves unable to fulfill the requirements set forth in this contract. In subsequent years, students may not withdraw from an AP course once they have completed registration and signed this contract.
- In order to ensure that students will have the ability to be successful on the AP exam, those students whose grades fall below a C at any time during the year will be required to attend recitation and remediation sessions in addition to their regular class periods. These classes will be held from 7:00–8:00 a.m., three times per week or at the direction of the instructor. The school attendance policy will be in effect for these classes, with additional assignments and assessments assigned and given.

In addition to the above school-wide expectations, students wishing to enroll in AP Calculus must agree to abide by the following additional expectations.

- Students wishing to enroll in AP Calculus must have taken and passed all subsequent mathematics classes up to and including Trigonometry and Pre-Calculus.
- Students should be prepared to attend mandatory practice sessions (before/after school and on weekends) during the month prior to the AP examination in May.
- Because the AP exam is over three hours in length, and in order for students to become accustomed to exerting a sustained mental effort for prolonged periods of time, assessments will sometimes begin at 7:15 a.m. Days necessitating an early start will be announced in advance.

Student and Parent Acknowledgement

AP Calculus, 2007–8

Student: I, _____ (print name), verify that I have read the attached syllabus, understand the class rules and expectations, and will abide by them to the best of my ability.

Signature: _____ Date: _____

Parent: I, _____ (print name), verify that I have read the attached syllabus, understand the class rules and expectations, and will support them to the best of my ability.

Signature: _____ Date: _____

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