

HIGHLAND

HIGH SCHOOL • SLC, UT™

AP Calculus BC

Louise Wisner

louise.wisner@slcschools.org

801.484.4343, room D302

wisnerathighland.weebly.com

Class Description: From the College Board Advanced Placement Calculus BC: Students in AP Calculus BC will focus on the four big ideas that are foundational to calculus: limits, derivatives, integrals and the Fundamental Theorem of Calculus and series. This course and the accompanying Intro to Calculus course are designed to meet the AP curricular requirements for Calculus BC. We will examine and explore course topics with equations, graphs, tables, situations, and real world applications.

Objectives

1. Students will prepare to pass the AP Calculus BC test in May.
2. Students will develop a strong intuitive comprehension of limits and be able to compute limits not limited to one-sided, at infinity, of sequences and infinite limits. Students will know algebraic properties and techniques for finding limits. Finally, they must understand the relationship between limits and continuity.
3. Students will use the concept of limits to build the derivative and use derivatives to compute the instantaneous rate of change of a function. Students will apply derivatives to graph analysis. These will use different definitions of derivatives and apply rules and properties. Students will apply the Mean Value Theorem and apply derivatives to rates, optimization, and growth and decay models.
4. Students will define a definite integral involving Riemann sum and be able to approximate a definite integral with different methods. Students will compute definite integrals using geometry, use integration and properties of integrals, and apply to area, volume and motion applications. They will understand the relationship between integration and differentiation through the Fundamental Theorem of Calculus.
5. Students will study series of numbers, power series and various ways to determine convergence or divergence of a series. Students will explore Maclaurin series, Taylor series, radius and interval of convergences and operations on power series. Students will make connections using power series to make connections between tangent-line problems and approximation.

Course Materials

1. Graphing Calculator such as the TI-84 Plus™ or higher. If purchasing for the first time, the TI-Inspire is best. Best pricing can be found at www.valleybusinessmachines.com. There are some calculators available for checkout in the book room.
2. A 3-ring binder with loose-leaf paper and dividers.
3. A graphing paper or grid paper notebook.
4. Pencils, colored pencils/colored pens/highlighters, ruler, compass, Post-it Notes or tab markers, and pouch to hold it all.
5. Textbook: Finney, R., Demana, F., Waits, B., and Kennedy, D. *Calculus: Graphical, Numerical, Algebraic* 4th edition. Boston: Prentice Hall, 2012.

Class Expectations

1. Be Respectful.
 - a. Listen and learn. Precise instructions are given to benefit everyone. Follow first time given.
 - b. All school policies apply in the classroom. Refer to student handbook.
 - c. Actively and positively participate individually and in groups.

- d. Respect the speaker, others, and our classroom. Make the most of classroom time.
2. Be in your seat before the bell rings.
3. Bring and use your own materials as instructed.
 - a. Be prepared. Bring all supplies to class daily.
 - b. Do the work and study. Ask questions for better understanding.

If a student chooses to disrupt the learning environment, one or more of the following will occur: the student will be detained after school/class, the parent will be notified, or the student will be referred to the assistant principal. Continued lack of compliance may result in withdrawing from the course.

Grades

A 93% or higher	B+ 87%-89.9%	C+77%-79.9%	D+ 67%-69.9%	F ≤ 59%
A- 90%-92.9%	B 83%-86.9%	C 73%-76.9%	D 63%-66.9%	
	B- 80%-82.9%	C- 70%-72.9%	D- 60%-62.9%	

Grading System:

Each quarter's grade is based upon a variety of activities including but not limited to individual work, group and partner work, presentations, packets, tests, and quizzes. Grades will be updated on a minimum of a weekly basis. Students and parents/guardians can check student's grades on PowerSchool. In preparation for the real world, there will be no quiz/test retakes. If a student is absent, they are expected to take the quiz/test upon their return to class.

Quarterly Grades: 70% Assessments, 30% Assignments

Cheating on any assignments, quizzes, or test is not tolerated. Students may be referred to the administration for consequences. Please note: Daily attendance to class does not guarantee a passing grade.

General Class Policies:

1. No work means half credit.
2. Assignment sheets will be given to encourage students to prepare and organize their work. All tests and quizzes will be announced in advance. Projects may need time outside of class.
3. All homework is to stay the 3-ring binder. Students may hand in homework one day late for half credit.
4. Talking is prohibited during testing time. Sharing of calculators during tested is also prohibited.
5. Students are expected to take any missed assessments the day upon which they return.
6. No phones.
7. All students are expected to do their own work.
8. Students must remain in the classroom the entire period. Students may not leave the classroom for forgotten materials or work. No Hall Passes are given.

Attendance Policies: If you know you will be absent, please tell the teacher ahead of time.

1. Excused/Explained Absences:
 - a. The student is responsible for making up notes and work missed.
 - b. A two-day make-up time will be given for each day missed due to excused/explained absences.
 - c. Failure to makeup a test in time will result in a zero. Make arrangements with the teacher within two weeks of the absence. Continued absences on review/test days will be documented. Steps will be taken to notify parents and assistant principal.
2. Unexcused Absences:
 - a. Students will come before or after school to make up the work or earn a zero for the assignment.
3. Absence for School Activities:
 - a. The missed day and new assignment are due the day the student returns to class.
 - b. Plan to take the quiz or test before absence.

Students needing help due to absences may make an appointment with Ms. Wisner before/after school in room D302. All students will be encouraged to take advantage of the opportunity to receive help even if not absent from class. Free math tutoring is available at HHS, Monday-Thursday in Room E216 before and after school.