

# PreCalculus

Edgerton

## Essential Questions

- Which mathematical model best fits a set of data and why?
- What advantages & limitations are there in representing algebraic relationships geometrically?
- In what ways is mathematics a part of daily life?

## Course Description

This course integrates algebra, trigonometry, and geometry while developing additional mathematical techniques and understandings. Data analysis, mathematical modeling, and problem solving will be employed throughout the course. Diverse mathematical applications will introduce, connect, and extend the course content. Directed writing and instructional technology will also be used to expand students' ability to communicate mathematically and broaden conceptually.

## Course Topics

- Mathematical modeling: linear, quadratic, power, exponential, logarithmic, parametric, polar, and trigonometric.
- Functions and their inverses.
- Right and non-right triangle trigonometry (including vectors).
- Matrices.
- Conic sections.
- Discrete probability and the binomial theorem.
- Rates of change.

## Criteria Used to Determine Grades

Course grades are calculated by dividing the student's point total by the number of points possible using category weighting. Students earn points from homework, daily journal writing, projects, quizzes (formative evaluations), and tests (summative examinations). Weighting will be as follows

70% – Assessments (tests, quizzes and projects)

10% – Assignments (class activities and homework)

10% – Journal (to be done in hardbound composition book only—no spiral notebooks!)

10% – Class work, to include

- Readiness to work (includes punctuality and having proper materials)
- Completion of “Entry Task” within first 5 minutes of class
- Participation in class activities
- Quality of collaboration in group work
- Silently writing a response to the JR during the last five minutes of class.

## Required Materials/Equipment

- Three-ring binder with a separate section for this course.
- Two (2) hardbound theme books (i.e. *Mead Composition Book*) for journaling (no spirals!).
- Texas Instruments TI-83<sup>+</sup> (or TI-84<sup>+</sup>) Graphing Calculator + extra AAA cells.
- Basic drawing supplies (ruler that measures in centimeters, compass, protractor).
- Several pencils or mechanical pencil with extra lead + a pen (for journal writing; NOT red ink).

**Suggested:** Internet-connected computer for online explorations and checking the class Website.

Special notes: electronic devices (e.g. cell phones, music players), food, gum, and beverages (except for water in a sealable bottle) are prohibited in the classroom. Electronic devices must remain off and out of sight at all times. Keep this packet with you the first few days of the term—we will have quizzes over it!

**Contact Information:** [Richard.Edgerton@highlineschools.org](mailto:Richard.Edgerton@highlineschools.org)

See [edgertonphd.us/rahs](http://edgertonphd.us/rahs) (for assessments, activities, assignments, etc.).

## ATTENDANCE

Consistent, punctual attendance is essential to learning. The following guidelines are given to emphasize this importance and to clarify your consequences and responsibilities with regard to absences and tardiness.

1. You are tardy if you are not in your assigned seat at the time class is scheduled to begin. Detention begins on the third tardy per quarter, referral to Mr. Kelly on the fifth.
2. Tardiness of more than ten (10) minutes will be recorded as an absence. You must check in with the attendance secretary before being admitted to class.
3. Work from a day on which you have an unexcused absence will **not** be accepted *under any circumstances*. This includes assignments, projects, quizzes, and tests!
4. When returning from an absence, make sure that your absence is excused according to school policy. Hand in your missing work as soon as possible, including the ETs. Be aware there are several ways you should know what work is assigned!!!!
5. Pre-arranged absences are allowed with the understanding that all assignments, activities, projects, and assessments are to be submitted **on the day they are due for the rest of the class**. Please make arrangements before your departure. This means you do NOT get extra time because of your pre-arranged absence!
6. You may be excused to work with another teacher **only if** you:
  - a) bring a signed, dated note from the other teacher stating the reason you are needed.
  - b) submit all work that is due for you.
  - c) confirm understanding of the day's assignment or activity.
  - d) accomplish all the above *before* class begins.
7. Due to the varied difficulties in activities, special materials will be available for at most two days after the class has completed an activity (occasionally online for longer). This also applies to those who miss an activity because of pre-arranged absences. NO alternative activities will be provided for those missed.
8. Since rapid feedback enhances learning, a limit on the make-up of assessments is necessary. A quiz must be made up within one day of its administration. With tests, one day is allowed for each day of absence (as in #4 above) up to a maximum of three days from the test date. To be allowed to make up an assessment, you must fill out the "Missed Assessment" form after agreeing upon a test date with me (you must also keep the appointment!). Assessments that are not made up within the prescribed timeframe receive a score of zero. Check the Website ([edgertonphd.us/ahs](http://edgertonphd.us/ahs)) for activities, assignments, assessments, etc.
9. Students accumulating eleven (11) absences (of any type) in a semester will receive an "F" grade. All school and district rules regarding attendance will be followed.
10. Remember that consistent attendance is essential to academic achievement and often carefully scrutinized by prospective employers and colleges!

## ASSIGNMENTS

1. Your homework must have the following to be accepted:
  - a) written in hardbound theme book, entered in chronological order.
  - b) the date of the assignment (when it was assigned, not when due or when you did it).
  - c) a description of the assignment (page, which problems, etc.).
  - d) legible writing hand and in a color other than red (either pencil or pen is OK on papers, work done in the journal *must* be in permanent ink).
2. Your work will be counted as “late” if submitted for scoring any time after papers have been checked or collected. This includes journals not available when they are scored (about every week). Late work is worth *no more* than half credit and must be submitted by the date of the associated in-class unit test. No late papers will be accepted during the last five school days of a grading period. Consult the page called “Attendance” for details concerning excused and pre-arranged absences. Assignments will not be accepted from days you have an unexcused absence!
3. When answers are given to problems, you are expected to mark each of your answers as to its correctness. Mark the correct answers with a “✓” (check) and incorrect answers with an “✗” (looks like the letter “x”). Incorrectly worked problems must be satisfactorily reworked before the paper will be accepted for scoring.
4. Every assignment problem must have these parts to receive credit:
  - a) the “facts” of the question (except on “worksheets”).
  - b) any accompanying diagram(s) used in the solution.
  - c) all steps leading to the solution (including trials for “guess and check”).
  - d) a clear indication of the solution, including an explanation and appropriate units.
  - e) a neat arrangement of your work.
  - g) your best attempt to solve each problem that was assigned (leave NO blanks!).
  - h) your own work (never copy the work of someone else) unless you duly credit the source. Failure to appropriately credit information or assistance is considered plagiarism.**Under no circumstances will a paper with nothing but answers be accepted!**
5. Scoring for a paper will be deferred and marked *incomplete* if it reveals conceptual misunderstanding. No substantial deduction will be assessed to papers that are completed in a timely manner (e.g. within one week), performed as expected, and include the original work. Papers that have been scored may not be returned to be re-scored.
6. Each day an “ET” (entry task) will be on the overhead. Write the ET and your response on your paper on its due date. ETs contribute to your understanding and the assignment’s value.
7. Class concludes with a “reflection” to be addressed in your journal. Your responses must be written in a hardbound composition book (no spiral notebooks!) and will be read regularly.
8. Errors are considered a normal part of extending one’s knowledge. Remember, if you are not making mistakes you aren’t trying hard enough! All thoughts, calculations, ideas, solution possibilities, etc. should remain (although crossed out) to provide you and me and opportunity to see previous ideas and learn from them.
9. Keep track of your progress by checking and sharing your progress reports (online in your *Illuminate* account). Knowing your standing in the class is *your* responsibility!

Extra credit—limited to:

Schedule and appear for an “extra credit appointment” within the first five weeks of a quarter. You may schedule one per quarter and it cannot be made the same day as scheduled. There is a penalty for not appearing as scheduled. Use the EC APPOINTMENT form on the clipboard at the front of the classroom. Value: 10 points added to the *Assignments* category.

## GRADING

Your grade will be determined by comparing your point total with the “grade base” for the class using weighing on page 1 of this syllabus. Students earn points from homework, daily journal writing, projects, quizzes (formative evaluations), and tests (summative examinations). All of these methods of earning points contribute to the grade base with the exception of extra credit (explained separately). A *semester project* will be due by the final week of the semester. Be sure to watch for the announcement of the project! You must meet standard on all parts of the project for your submission to be acceptable. Quarter and semester grades will be assigned using the following percentages:

90% <sup>+</sup> and successfully completing semester project .....	A
80% <sup>+</sup> and successfully completing semester project .....	B
70% <sup>+</sup> and successfully completing semester project .....	C
below 70% or not successfully completing semester project .....	F

Remember to check my Website ([edgertonphd.us/ahs](http://edgertonphd.us/ahs)) for assessments, activities, assignments, entry tasks, journal prompts, etc. (check progress online in your *Illuminate* account). Remaining aware will help you avoid surprises at grading time!

### *Preparation and Participation score*

Research and good sense suggests learning is optimized when the student arrives to class ready to participate and engages in the activity. The following are the items for which students receive their daily “Preparation and Participation” score.

- Readiness to work (includes punctuality and having proper materials)
- Completion of “Entry Task” within first 5 minutes of class
- Participation in class activities
- Quality of collaboration in group work
- Silently writing a response to the JR during the last five minutes of class.

Students may also earn additional P & P points by volunteering to demonstrate problems (when the opportunity is offered). Similarly, students earn a zero for P & P for a dress code or technology violation.

## COMPUTER USE POLICY

Check whether your computer is required for the class before opening it.

Use ONLY your District-issued laptop computer.

Follow all District *Use and Responsibility* guidelines.

Bring charged—no recharging during class.

Enter and leave respectfully.

No food or beverage except for water in sealable bottle.

Link ONLY to the school network.

No off-task computing.

Spend no more than five minutes troubleshooting a problem.

Store files on network rather than “your” school-issued laptop.

Close the lid of your laptop within five seconds of its announcement.

## ASSESSMENTS

Assessments will be of one of two forms: *formative* and *summative*. Quizzes are *formative* in nature because they occur during the study of material and help in developing understanding in addition to providing information on student understanding. They also have less impact on students' scores than summative exams. Expect a quiz each week. *Summative* assessments (chapter tests and final examinations) are comprehensive, less frequent, and carry more weight. All assessments must be completed during one "sitting" (you may not leave and return to finish it later) and restroom breaks are not allowed. Expect a test about every month and final exam at the end of each semester.

If you miss a test due to an excused absence, it must be made up within three days of the assessment date with the understanding that you have only one day for each day you were absent. Quizzes must be made up no later than the next class day. Students missing an assessment due to arranged absences must take the assessment *before* their departure. To make up a missed assessment, fill out the "MISSED ASSESSMENT" form (found on the clipboard at the front of the classroom) and hand it in to arrange a time and date. **FAILURE TO SUBMIT MISSED ASSESSMENT FORM ON YOUR RETURN TO CLASS NULLIFIES YOUR OPPORTUNITY TO MAKE UP THE ASSESSMENT.** Please note that no credit will be given for tests not taken. As stated in the attendance policy, tests and quizzes missed because of unexcused absences may not be made up.

Leaving one's seat, using (or the ringing of) your cell phone, texting, talking to another student, or looking at another person's paper during an assessment results in a zero for all parties involved (yes, this means for allowing someone to see your paper!) and will be referred as appropriate. Cheating and other related transgressions are serious!

"Studying" involves review of material without the express intent of completing assigned work. Here are some suggestions that make studying more meaningful:

- a) re-read meaningful materials
- b) review, complete, and rewrite notes
- c) look for errors on assignments and rework problems
- d) learn the related vocabulary
- e) PRACTICE by doing additional exercises and self tests
- f) Check my Website ([edgertonphd.us/ahs](http://edgertonphd.us/ahs)) for class links, information, etc.

Assessments in this class are written to be *authentic*—representative of real-world situations. Because of this, you may use a 3x5 note card, drawing materials, and YOUR calculator. Note the content of summative evaluations will be posted on the Website before the assessment.

Occasionally students' scores are not as high as expected. In this class, you can improve your score by performing "test corrections" (available only on chapter tests) by which you may gain up to 50% of the points missed on the test. The procedure for performing corrections is:

- a) Appear for one of the offered test correction sessions (one will be after school, one before). This will be announced in class and on the Website after tests are scored.
- b) Work each non-extra credit problem (in its entirety) for which you want to attempt a score increase *on separate paper*. DO NOT ALTER YOUR ORIGINAL ANSWERS! You must show work for ALL problems if the test was multiple choice. Have it checked during the session.
- c) Paraphrase the question (including facts), show relevant process, and give the correct solution.
- d) Staple corrections BEHIND original test and hand in together.
- e) Copying from another student is *not* allowed—no computers or extraneous notes allowed!!!

### The use of music devices during assessments

Recent research suggests performance is often enhanced when the test-taker listens to (certain) music. Students may listen to sound-reproducing devices during assessments only if the device: only plays music (is not a cell phone, computer, etc.); is kept in sight (e.g. on the table) during the assessment; cannot be heard by anyone else; allows the user to hear alerts & announcements; and, is put away when the assessment is finished.

## EXPECTATIONS

1. Always show courtesy. You are expected to demonstrate courtesy to your classmates, school, teacher, class materials, and surroundings. Speak in a moderate voice and never give any object an horizontal component of velocity. Let others have their turn. Honor diversity.
2. Be prepared to work. Bring your book, writing implement(s), paper, etc. every day and be in your seat working on the E T *by the time* class is scheduled to begin. Do your own work (never copy the work of someone else). Use a three-ring binder for loose papers and use dividers so that there is a separate section for this class (write homework responses in a composition book). You will be counted tardy if you are not in your assigned seat when the class is scheduled to begin!
3. Carefully record assignments and scores. Record all graded work in some reliable place (such as your planner or personal calendar). Remember to check my Website ([edgertonphd.us/ahs](http://edgertonphd.us/ahs)) for assessments, activities, assignments, etc. (check online in your *Illuminate* account for scores and grades). Keep aware of your standing in the class.
4. Do not bring distracters to class. This includes cell phones, pagers, food, beverages, gum, and any kind of sound reproducing apparatus. Inappropriate materials will be confiscated and delivered to appropriate administrators. Water in a sealable bottle is OK.
5. Exercise moderation in your movements. Stay in your assigned seat until dismissed, visit the pencil sharpener or trash basket only when appropriate, and be reasonable in the way that you work with others. Always behave in a businesslike manner.

## BEHAVIOR FOR A SUBSTITUTE

1. Assist the substitute in every way possible. Help to see that normal operation of the class can be achieved by helping to explain the class routine, aiding with attendance, locating an E T, volunteering to answer questions, etc.
2. Be extra courteous. Follow all directions, return all materials in a timely manner, remain in your seat until dismissed.
3. Do the assigned work without complaining. Ensure you know the day's expectations by checking the class Website ([edgertonphd.us/ahs](http://edgertonphd.us/ahs)).
4. Remain actively engaged in some productive task and stay in the classroom. You may leave ONLY if summoned by the office or you suddenly become very ill. This means no "potty passes," getting drinks of water, etc.
6. Perform your assignment in the way that you would expect your *regular* (i. e. me!) teacher would have you do it. Find extra work to do if you finish your assignment early.
7. Show pride in your school, your class, and yourself by not taking advantage of the substitute. You are expected to exhibit excellent behavior, just as you would for any guest.
8. Remember that anyone who becomes a discipline problem for the substitute may be removed from class by the substitute and referred for later disciplinary action.
9. You will be evaluate your behavior using the following criteria:
  - 10 = Perfect behavior: everyone on task entire time, objectives accomplished
  - 8 = Very good behavior: objectives accomplished, few deviations
  - 6 = Somewhat good behavior: objectives mostly accomplished, some deviations
  - 4 = Somewhat below average behavior: objectives barely accomplished, few disruptions
  - 2 = Poor behavior: some objectives not accomplished, some disruptions
  - 0 = Utterly unacceptable behavior: objectives not accomplished, many persistent disruptions

## JOURNALS

This class is designed so that each session concludes with a “reflection” to be addressed in your journal. Your responses connect, summarize, and/or extend the day’s lesson. Journal Responses (JRs) contribute to your class grade and will be read several times during the quarter.

Journals and their associated entries must conform to the following

- Use a hardbound theme book (i.e. *Mead Composition Book*) for journaling.
- Write honest, complete responses to each prompt. The expectation is you will write for five minutes at the end of each class period.
- Date each entry.
- Use ink.
- Leave your journal in the classroom.
- Take your journal out of the file cabinet drawer when you enter the classroom. Neatly replace your journal in the appropriate space for your class at the end of class as you depart the room at the end of class.
- Write JRs ONLY (no ETs, homework problems, notes, etc.).
- Conserve space by writing as many entries per page as practical.
- Write clearly using only one side of a sheet.
- Avoid defacing your journal (e.g. tearing our pages, scribbling, etc.).
- Personalize the front of your journal to make it easy to identify.

## CALCULATORS

*Aviation High School* requires all students to own a Texas Instruments TI-83<sup>+</sup> (or TI-84<sup>+</sup>) Graphing Calculator. These devices enhance students' learning and provide access to mathematical power. Learn how to use your calculator and bring it to class every day!

A new TI-83<sup>+</sup> costs about \$90 and is currently available at several stores at substantially less. Please check adds for the best deals—likely vendors are K-Mart, Target, Staples, Fred Meyer, and Office Max. Although excellent deals are often available on eBay, remember to exercise caution whenever purchasing from an unknown person.

### Suggestions

- Always keep it in your possession (avoid “loaning” it to another student).
- Personalize it with paint and engraving. Make your calculator unique!
- Do NOT install games on your calculator.
- Carry fresh AAA cells (at least four of them!).

“Edge”

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edgertonphd.us/rahs

Riley Germanis

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*Please clip, sign, and return this portion immediately to signify receiving the syllabus packet.*

**Keep this packet with you the first few days of the term—we will have quizzes over it!**

**Please detach and return the sheet below.**

✂-----✂-----✂-----✂-----✂-----✂-----✂-----✂-----✂-----✂

Student's name: \_\_\_\_\_ Period: \_\_\_\_\_

Please check the pages you reviewed in the *Syllabus* packet.

- |   |  |
|---|--|
| <input type="checkbox"/> Course syllabus (first page) | <input type="checkbox"/> Assessments                     |
| <input type="checkbox"/> Attendance                   | <input type="checkbox"/> Expectations & Behavior for Sub |
| <input type="checkbox"/> Assignments                  | <input type="checkbox"/> Journals                        |
| <input type="checkbox"/> Grading & Computer Use       | <input type="checkbox"/> Calculator                      |

I realize we may check the Website (edgertonphd.us/ahs) for assessments, activities, assignments, etc. (grades and scores are online in our *Illuminate* account).

Signed:

\_\_\_\_\_  
Student Parent Date

Parent name(s): \_\_\_\_\_

Telephone number(s): \_\_\_\_\_

Parent email address(s): \_\_\_\_\_