

Dual Credit College Algebra

Westside High School

Course Syllabus Fall 2018

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Tutorials: Tuesday-Thursday beginning of lunch or mornings except exam days. Never tutorials on lunch Monday or Friday and after school.

Prerequisite:

This is NOT an open enrollment class. You need to have taken the SAT and got a 500 math and 1070 composite, or on the ACT got a 19 math score and 23 composite, Algebra 1 STAAR EOC 4000, or have taken the TSI at HCC Katy Campus to be eligible for the class. If you have a hard copy of this information, then please send it to me as soon as possible. If you live in a non-HISD area, then you will have to pay to take this course. If you can show me on Naviance your scores that will be great too.

This course is designed as a review of advanced topics in algebra for students who plan to take calculus courses in preparation for their various degree programs in science and engineering. It is also intended for non-technical students who need college mathematics credits to fulfill requirements for graduation and prerequisites for other courses.

This is a Dual Credit class, which means that students passing this class will receive credit both for HISD (Westside High School) and for HCC (Katy Campus). For HISD purposes, this class does **not** count toward the mathematics requirement, it is an elective only. For HCC purposes, it is a three-hour class listed in the class catalogue as MATH 1314.

Topics include quadratics, polynomial, rational, logarithmic and exponential functions, system of equations, matrices, determinants, parabolas and ellipses. An HCC department final examination (33 multiple choice questions) will be given in this course.

Course Objectives

At the completion of this course, a student should be able to

1. Solve linear equations and set up and solve word problems involving age, motion, solution/mixture, and geometric figures.
2. Solve Quadratic Equations in one variable by the method of factoring, completing the square and the quadratic formula.
3. Solve a literal equation for specified variables.

4. Find the distance between two points in the Cartesian plane.
5. Solve radical equations, fractional equations, and equations of quadratic form.
6. Recognize the equation of a straight line, graph the equation of a straight line, find the slope and intercepts of a line, know the relationship between the slopes of parallel and perpendicular lines, and be able to determine the equation of a line from information such as two points on the line, or one point on the line and the slope of the line.
7. Know the definition of a function, determine the domain and range of a function, evaluate expressions involving functional notation, simplify expressions involving the algebra of functions, graph functions by plotting points, know the definition of inverse functions, and given a function find its inverse.
8. Graph linear functions and quadratic functions, piecewise defined functions and absolute value functions.
9. Solve linear inequalities and linear equations involving absolute value, state the solution in interval notation and graph the solution.
10. Graph the solution of a linear inequality in two variables.
11. Understand vertical and horizontal shifts of graphs and stretching, shrinking, and reflection of graphs of functions.
12. Solve non-linear (quadratic and rational) inequalities, state the solution in interval notation and graph the solution.
13. Solve systems of equations in three variables by algebraic techniques.
14. Solve systems of linear inequalities by graphing.
15. Recognize the equations of, sketch the graphs of, and find the equations of circles where the center may be at any point in the plane.
16. Understand the inverse relationship between the exponential and logarithmic equations.
17. Perform operations with matrices
18. Solve and apply systems of linear equations using matrices.

Course Requirements

- Homework: Homework will be daily and out of the book.
- Due Dates: Most problems will be presented in class by you so be prepared to show your work to the class
- Quizzes:
Most quizzes will be announced and similar to homework questions. In other words, do your homework, and study what you missed and you should be prepared for quizzes.
- Tests: There will usually be 3 tests per six weeks. Majority of exam will be similar to homework and quizzes with a small portion being unique but still cover material that I have covered. If grade is below a 75 then student can do a redo on the test questions missed to get up to a 75. All exams are Non-calculator

- Attendance:

If absent, you will need to get together with another student and online for the lecture notes, etc.

I will post a copy of the notes to the HUB so you can view.

If you know you will be out of my class, you need to tell me ASAP (by talking face to face, call or email)

- Tardies:

Please get to my class on time. Constant tardiness will result in negative student conduct consequences.

- Class Participation:

To be successful in this class you must be doing your math work in the class. You will be doing a lot of problems on the board to show your understanding of the material

- Cell Phone Policy: Phones will be turned in at the appropriate spot and can be picked up when I say you can. If there's something that I want you to use your phone for then you can get them.

Tutorials:

- All students are encouraged to come to tutorials.
- If you have trouble with any math question, you are expected to come to tutorials, use study groups, and/or use other resources. Use the remind app to also contact me for help.

Letter of Recommendations- If you would like me to give you a letter of recommendation you will need to write it first and then I will edit it.

Grades:

Course Average	HCC-Grade Reported	Westside Semester Grade
90-100	A	95
80-89	B	85
70-79	C	77
60-69	D	72
1-59	F	65

Bonus Opportunities:

- 100% attendance and participation on Exam days earns 1 pt. earned on exam
- (Note: if you know you will miss an exam and you communicate and arrange your alternate test time with me prior to the day of the test, you are still eligible for the bonus point, in other words, you have taken the test before, not after, everyone else does!)
- Additional points may be earned on each exam.
- 1 point on your Six Weeks average for no tardies during the six weeks
- 1 point on your Six Weeks average for no absences during the six weeks
- there may, or may not be, additional bonus opportunities offered occasionally in class

Communication:

If you or your parents would like to communicate with me, and if it is not convenient to do so in class, then I can be reached in a variety of ways. My email address is mondurch@houstonisd.org, and I read my email at least two times per day. We can also meet face to face here at the school; my conference period is 4th period.

