General Course Information

<table>
<tr><td colspan="2" align="center">Course Name: College Algebra</td></tr>
<tr><td>Department: Math</td><td>Grade Level(s): 11-12</td></tr>
<tr><td>Duration/Credits: Full Year/1 Credit</td><td>Prerequisites: Honors Algebra II/Trigonometry and a Geometry course, or Algebra II (Grade of "A" or "B" recommended) and a Geometry course, with teacher recommendation.</td></tr>
<tr><td>BOE Approval Date: 12/19/19</td><td>Course Code: H2400W</td></tr>
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Course Description:

This course brings together and organizes the arithmetic, algebraic, and geometric concepts studied throughout the student's educational career. Emphasis will be placed on graphing different types of functions and conics.

Course Rationale:

The need to understand and be able to use mathematics in everyday life and in the workplace has never been greater and will continue to increase. The underpinnings of everyday life are increasingly mathematical and technological. Just as the level of mathematics needed for intelligent citizenship has increased, so too has the level of mathematical thinking and problem solving needed in the workplace. Those who understand and can do mathematics will have significantly enhanced opportunities and options for shaping their futures. Mathematical competence opens doors to productive futures.
Note: This course may not be taken after successful completion of precalculus. course

Course Objectives:

Upon completion of this course, students should be able to work with all types of numbers, solve linear and polynomial equations, graph equations, inequalities, and all types of functions, including polynomial, rational, exponential, logarithmic and conic sections, as well as, solve systems of equations and inequalities.

1. The student will recognize, graph and manipulate functions, expressions, and formulas to relate them to real world situations.
2. The student will solve polynomial, rational, exponential, and logarithmic equations symbolically and using graphs.
3. The student will read and analyze word problems to apply college algebra concepts to real life situations (A+ Reading)
4. The student will solve polynomial equations of various degrees within real and

complex number systems.
5. The student will demonstrate knowledge of algebraic concepts by writing and solving equations and inequalities. (A+ Writing).
6. The student will perform transformations of parent functions and conic sections
7. The student will engage in mathematical arguments by verbally explaining solutions of and responding to peer discussion (A+ Speaking and Listening)
8. The student will gain comprehension of sequences and series
9. The student will research college algebra topics and present findings (A+ Research)
10. The student will solve systems of equations and inequalities through various methods including matrices

Dual Credit:

This course is offered as a Dual Credit course through:
- Missouri Baptist University: Students who enroll in the dual credit course will receive 3 college credits for this course, provided they maintain an overall 3.0 GPA and receive a C or better in the course. Information on how to sign up will be given in class. The college course grade received will be an average of the two high school semester grades earned.
  - MBU Course title: MAT 133 College Algebra
- St. Louis Community College: Students who enroll in dual credit course will receive 4 college credits for this course with a score of 22 in the math ACT or take the accuplacer test and test into college algebra.
  - STCC Course Title: MAT 160 Precalculus Algebra