



Course Number and Title: MAT 020 Elementary Algebra

Campus Location:

Georgetown, Dover, Stanton, Wilmington

Effective Date:

2018-51

Prerequisite:

MAT 010, SSC 100 or concurrent

Co-Requisites:

None

Course Credits and Hours:

4.00 credits

4.00 lecture hours/week

0.00 lab hours/week

Course Description:

This elementary algebra course is a review of solving and graphing linear equations and inequalities as well as systems of linear equations and inequalities, polynomials, factoring, rational expressions, radical expressions, and quadratic equations as applied to a variety of applications, including geometry.

Required Text(s):

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:

Basic calculator

Schedule Type:

Classroom Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Solve linear equations and inequalities algebraically and graphically. (CCC 2, 6)
2. Solve systems of linear equations and inequalities algebraically and graphically. (CCC 2, 6)
3. Perform arithmetic operations on polynomial expressions. (CCC 6)
4. Apply factoring techniques to simplify rational expressions. (CCC 6)
5. Solve quadratic equations. (CCC 2, 6)
6. Evaluate functions graphically and algebraically. (CCC 2, 6)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Solve linear equations and inequalities algebraically and graphically.
 1. Use order of operations to solve linear equations and inequalities.
 2. Use linear equations and inequalities to solve a variety of application problems, including geometry.
 3. Determine the slope, x- and y-intercepts and the equation of a line.
 4. Graph linear equations.
 5. Analyze linear equations to determine whether graphical representations are parallel, perpendicular, or neither.
 6. Graph linear inequalities.
2. Solve systems of linear equations and inequalities algebraically and graphically.
 1. Classify systems of linear equations as consistent, inconsistent, or dependent.
 2. Determine solution sets to systems of linear equations using substitution, elimination, and graphing methods.
 3. Use systems of linear equations to solve application problems.
 4. Solve systems of linear inequalities graphically.
3. Perform arithmetic operations on polynomial expressions.
 1. Simplify exponential expressions using rules of exponents.
 2. Convert between standard and scientific notation.
 3. Multiply and divide numbers in scientific notation.
 4. Identify the degree and type of a polynomial expression.
 5. Add, subtract, multiply, and divide polynomial expressions.
4. Apply factoring techniques to polynomial and rational expressions.
 1. Factor polynomial expressions using the greatest common factor (GCF).
 2. Factor polynomial expressions using grouping, trial and error, perfect squares, difference of squares, and sum/difference of cubes.
 3. Simplify rational expressions.
5. Solve quadratic equations.
 1. Simplify radical expressions.
 2. Write quadratic equations in standard form.
 3. Apply the zero product property to quadratic equations.
 4. Use factoring, the square root theorem, and the quadratic formula to solve quadratic equations.
6. Evaluate functions graphically and algebraically.
 1. Identify functions from graphs and sets of ordered pairs.
 2. Determine the domain and range of functions from graphs and sets of ordered pairs.
 3. Evaluate functions graphically and algebraically.
 4. Graph linear functions.

Evaluation Criteria/Policies:

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	-	100	=	A
83	-	91	=	B
75	-	82	=	C
0	-	74	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):

None

Disabilities Support Statement:

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.