



Course Number and Title: ACM 012 Algebra II

Campus Location:

Georgetown

Effective Date:

2021-51

Prerequisite:

ACM 011 Algebra I

Co-Requisites:

None

Course Credits and Hours:

2.25 credits

2.25 lecture hours/week

0.00 lab hours/week

Course Description:

This course builds on topics explored in ACM 011, including linear equations, inequalities, graphs, matrices, polynomials and radical expressions, quadratic equations, functions, exponential and logarithmic expressions, sequences, and series.

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:

Access to a computer, the Internet and TI-83 Graphing Calculator.

Schedule Type:

Classroom Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Apply algebraic operations to manipulate rational expressions, and solve rational equations. (CCC 2, 6)
2. Apply algebraic concepts to manipulate expressions, and solve equations involving roots and radicals. (CCC 2, 6)
3. Solve quadratic equations and functions. (CCC 2, 6)
4. Manipulate and solve exponential and logarithmic equations. (CCC 2, 6)
5. Gain an introductory knowledge of parabolas and circles. (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 Objectives (MPOs):

Upon completion of this course, the student will:

1. Apply algebraic operations to manipulate rational expressions, and solve rational equations.
 1. Determine the domain of rational functions.
 2. Perform basic operations on rational expressions.
 3. Solve rational equations.
 4. Apply concepts of algebraic operations on rational expressions to simplify complex fractions.
 5. Formulate solutions to application problems involving rational equations.
2. Apply algebraic concepts to manipulate expressions, and solve equations involving roots and radicals.
 1. Apply the rules of exponents to expressions involving rational and negative exponents.
 2. Translate expressions involving rational and negative exponents to radical expressions and vice versa.
 3. Simplify radical expressions.
 4. Perform basic operations on radical expressions.
 5. Solve equations involving radical expressions.
 6. Formulate solutions to application problems involving radical expressions.
 7. Express radical expressions as complex numbers.
 8. Perform basic operations on complex numbers.
3. Solve quadratic equations.
 1. Solve quadratic equations using either the square root property or completing the square.
 2. Solve quadratic equations using the quadratic formula.
 3. Formulate solutions to application problems involving quadratic equations.
 4. Graph quadratic equations.
4. Manipulate exponential equations.
 1. Graph exponential functions.
 2. Solve composite functions.
 3. Use the horizontal line test of functions.
5. Perform basic operations of parabolas and circles.
 1. Solve and graph equations of parabolas.
 2. Solve equations of circles.
 3. Write the equation of the circle given the center and the radius.

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 scale below:

| | | | | |
|----|---|-----|---|---|
| 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.