

Course Number and Title: ACM 032 Pre-Calculus

Campus Location:

Georgetown

Effective Date:

2021-51

Prerequisite:

ACM 024 Functions, Statistics & Trigonometry

Co-Requisites:

None

Course Credits and Hours:

2.25 credits

2.25 lecture hours/week

0.00 lab hours/week

Course Description:

This course is designed to integrate intermediate algebra, analytic geometry, and trigonometry with other college algebra topics through a functional approach as preparation for calculus.

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. Perform basic operations of intermediate algebra. (CCC 2, 6)
2. Use functional definitions and the algebra of functions to solve applications of linear and quadratic functions. (CCC 1, 2, 7)
3. Solve problems involving polynomial, exponential, and logarithmic functions. (CCC 2, 6)
4. Solve linear and nonlinear systems. (CCC 1)
5. Perform operations on matrices. (CCC 1, 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. Perform basic operations of intermediate algebra.
 1. Simplify expressions with integer exponents.
 2. Use the rules for the order of operations.
 3. Add, subtract, multiply, and divide polynomial and rational expressions.
 4. Factor quadratics and polynomials.
 5. Simplify expressions with radicals and rational exponents.
2. Use functional definitions and the algebra of functions to solve applications of linear and quadratic functions
 1. Graph equations by plotting points and a graphing calculator.
 2. Write equations of circles by using the distance formula.
 3. Write equations of lines given the appropriate data.
 4. Define a function, its inverse, domain and range.
 5. Write arithmetic functions and composite functions.
 6. Graph translation of functions.
 7. Solve linear, quadratic, absolute value equations and inequalities algebraically and graphically.
 8. Add, subtract, multiply, and divide complex numbers.
 9. Analyze rational equation(s) and graph using asymptotes and x and y intercepts.
3. Solve problems involving polynomial, exponential, and logarithmic functions.
 1. Solve rational, higher degree equations and inequalities algebraically and graphically.
 2. Change the logarithmic form of a function to exponential form and vice versa.
 3. Graph and analyze exponential and logarithmic functions
 4. Solve exponential and logarithmic equation algebraically and graphically.
 5. Solve applied problems involving exponential and logarithmic equations.
4. Solve linear and nonlinear systems.
 1. Solve linear system of equations by graphing, substitution, elimination, matrices, and Cramer's rule.
 2. Solve a system of linear inequalities.
 3. Solve application problems using linear programming.
 4. Decompose rational expressions into partial fractions.
 5. Solve and graph nonlinear system of equations.
5. Perform operations on matrices.
 1. Add, subtract, and multiply matrices.
 2. Find the inverse of a matrix.

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.