Miami Dade College

MAC 1105 College Algebra

Instructor:	Lorenzo, Giovanni	**Ref #:**	10061
Office:		**Term:**	Fall 2023
Email:	GLORENZO@MDC.EDU	**Department Phone:**	305-237-2431
Day/Time:	TR 7:05pm - 8:20pm	**Room:**	

Office Hours:

Office hours will be determined the first week of class.

Course Description:

This course introduces the student to the concept of functions and their graphs. Students will learn to graph linear, quadratic, rational, exponential, logarithmic, radical, power, and absolute value functions and their transformations. Students will perform operations on functions and compositions of functions, find the inverse of a function, apply the laws of logarithms to simplify expressions and solve equations, graph non-linear inequalities, and solve related applications and modeling problems.

Text and Requirements

College Algebra, 8th edition by Blitzer

We will be using MyMathLab for assignments. Please register for MyMathLab at www.MyMathLab.com .

Your Course ID is:

Communication:

Emails and messages will be returned with 48-hour Monday- Friday while the college is in session.

Attendance:

Attendance will be taken during each class period. Students who miss two or more classes may be withdrawn from the course. If you expect to miss a class or have missed a class for a valid reason, email your instructor.

WHAT CONSTITUTES AN ABSENCE IN THIS CLASS?

1) Physical/Virtual absence from a class
2) Inactivity in MyMathLab
   (1-week inactivity = 1 absence)

Classroom Decorum:

In order to optimize your learning experience, classroom interruption must be kept to a minimum. Please make every effort to arrive on time and avoid causing an interruption if you need to leave

early. Please turn your cell phone to a silent mode and avoid using it during class. In an emergency, you may excuse yourself and leave the classroom. In addition, while attending the virtual classroom, please be sure your microphone is on mute unless asked to unmute your microphone.

Registration and Withdrawal:

It is the students' responsibility to make sure they are registered for the course, and not dropped due to late payments or any other circumstances that may have come up. It is also the students' responsibility to drop the course before the drop deadline if they feel they will not be able to complete the course.

Academic Dishonesty Policy:

If a student is caught cheating, that student will automatically fail the assignment, and will be referred to the dean. For additional information on academic dishonesty policies, please refer to the Student's Right and Responsibilities.

Grading:

Please verify with the instructor of the course for the grading policy for this course

Incomplete Grades: An Incomplete is given only where extenuating circumstances exist, such as documented medical problems or a death in the family, and is issued solely at the discretion of the instructor. If the instructor agrees to grant an Incomplete, a written agreement must be completed between the instructor and the student, specifying the coursework to be completed, in what manner, and by when. Failure to fulfill the terms of the contract by the end of the next major term will result in an "F" for the course. A student may not remove an Incomplete by registering in a subsequent term to re-take the course. For more information on Incomplete grades, please refer to the Students' Rights and Responsibilities.

See grading policy example below:

The grade for this course will be based on homework and four equally weighted exams. There will be an optional final, which if taken will replace your lowest test score. You can use the following formula to calculate your grade in the course:

$$Grade = \frac{T_1 + T_2 + T_3 + T_4 + HW}{5}$$

Your final grade will be distributed according to the following scale:

Average of 90-100%	A
Average of 80-89%	B
Average of 70-79%	C
Average of 60-69%	D
Average below 60%	F

Miami Dade College

MAC 1105 College Algebra

Tentative Schedule may be changed at the professor's discretion, you're responsible to verify dates and topics.

Date	Topic
	Linear Equations with and Without Fractions
	Absolute Value Equations
	Linear Inequalities and Absolute Value Inequalities
	Definition of i, and Operations with Complex Numbers
	Solving Equations by Factoring
	Square Root Property and Completing the Square
	Quadratic Formula
	Solving Equations Quadratic in Form
	Radical Equations
	Midpoint Formula, Distance Formula, and the Equation of a Circle
	Test 1
	Definition of Functions and their Graph
	Functions and their Graph
	Function Notation
	Difference of Quotient
	Identifying Even and Odd Functions
	Finding the Domain of a Function
	Library of Functions with Shifts
	Reflection about the $x-axis$ and $y-axis$, and Stretching and Shrinking
	Piecewise Functions
	Composite of Functions and Operations on Functions
	Finding the Inverse of a Functions
	Test 2
	Sketching Quadratic Functions
	Applications of Quadratic Functions
	Definition of Polynomials and Sketching their Graphs
	Vertical and Horizontal Asymptotes
	Sketching Rational Functions
	Polynomial and Rational Inequalities
	System of Linear Equations Substitution Method
	System of Linear Equations Addition Method
	System of Inequalities
	Test 3
	Exponential Functions
	Logarithmic Functions
	Properties of Logarithms
	Exponential Equations
	Logarithmic Equations
	Applications of Exponential Equations

	Test 4
	Final

Resources:

- Tutoring Labs and Technology
- Learning Resources
- Virtual Tutoring through Learning Resources or Smarthinking Online Tutoring
- ACCESS A Comprehensive Center for Exceptional Student Services
- Single Stop
- Advisement and Career Services
- Password and Login Technical Support
- Technical Support for MDC Live and MDC Online Courses
- Smart Plan

Miami Dade College Policies:

Students Rights and Responsibilities: Students' Rights and Responsibilities site to learn about policies addressing code of conduct, grade appeals, religious observations, services for students with special needs, and many other areas.

Academic Integrity and Plagiarism: Please carefully review the Academic Dishonesty policies in the Students' Rights and Responsibilities site. This site identifies "cheating on an examination" as one action included under academic dishonesty. Copying, photographing, or any form of duplicating content in any assessment violates the integrity of the assessment. Such action will be viewed as academic dishonesty and my result in a failing grade for the corresponding quiz or exam. Plagiarism is another action identified as academic dishonesty. Presenting the work or ideas of someone else as one's own constitutes plagiarism, which is why students are always expected to cite their sources. Through the use of tools such as Turnitin, non-original work can be easily identified; if not sourced, this constitutes evidence of plagiarism and may result in a failing grade for the corresponding assignment.

Classroom conduct: It is recognized that Miami Dade College has the right to protect its educational purpose and its students from the irresponsible conduct of others. In order to ensure this right, the College finds it necessary to set forth the Student Code of Conduct that require student compliance for the welfare of the College community.

Addressing Student Complaints: As a first step, students are encouraged to discuss their concerns directly with the online faculty, if that is not satisfactory the student must follow the college's complaint procedure found at https://www.mdc.edu/procedures/Chapter4/4032.pdf

Diversity and Inclusion Statement: Miami Dade College is an equal access/equal opportunity institution which does not discriminate on the basis of sex, race, color, marital status, age, religion, national origin, disability, veteran's status, ethnicity, pregnancy, sexual orientation or genetic information.

Miami Dade College

MAC 1105 College Algebra

Public Safety:_____

- Public Safety Services and Emergency Numbers link
- Hurricane and Other Natural Disasters: In the event of a hurricane or other disaster, the class follows the schedule established by the College for campus-based courses. Please visit the MDC website or call the MDC Hotline (305-237-7500) for situation updates.

Course Competency
Competency 1: The student will demonstrate knowledge of absolute value equations and inequalities by:
1. Solving absolute value equations 2. Solving absolute value inequalities
Competency 2: The student will demonstrate knowledge of complex numbers by:
1. Simplifying radicals with negative radicands by using the definition of i 2. Simplifying powers of i 3. Adding, subtracting, multiplying and dividing complex numbers
Competency 3: The student will demonstrate knowledge of functions, from a numerical, graphical, verbal and analytic perspective by:
1. Distinguishing if a given relation is a function 2. Evaluating and using functional notation 3. Using the vertical line test to determine if a graph represents a function 4. Identifying and finding the domain and range of relations and functions 5. Performing operations on functions 6. Forming function compositions 7. Finding the inverse of a function 8. Graphing functions, including absolute value, radical and power functions with and without transformations 9. Graphing the inverse of a function 10. Analyzing and classifying the symmetry of functions 11. Defining, evaluating and graphing basic piecewise-defined functions
Competency 4: The student will demonstrate knowledge of quadratic equations and functions by:

1. Solving quadratic equations and equations quadratic in form using any available method 2. Using quadratic equations and their solutions to answer modeling questions 3. Using the discriminant to identify the types of solutions for quadratic equations 4. Graphing quadratic functions and identifying the vertex, x-intercept, y-intercept and the axis of symmetry of the graph 5. Finding the maximum or minimum value of a quadratic function in applications
Competency 5: The student will demonstrate knowledge of systems of linear equations and inequalities by:
1. Solving systems of linear equations in two variables using Substitution and Addition (also known as Elimination) methods 2. Solving systems of linear equations in three variables 3. Solving systems of linear inequalities 4. Solving applications and modeling using systems of linear equations and inequalities
Competency 6: The student will demonstrate knowledge of exponential and logarithmic functions by:
1. Graphing exponential and logarithmic functions with and without transformations 2. Identifying the domain and range of an exponential or logarithmic function 3. Applying properties of logarithms to expand and condense logarithmic expressions 4. Solving exponential and logarithmic equations 5. Applying modeling techniques to solve problems of exponential growth and decay
Competency 7: The student will demonstrate knowledge of polynomial and rational functions and inequalities by:
1. Graphing polynomial functions 2. Graphing rational functions 3. Determining domain of rational functions 4. Solving polynomial and rational inequalities and graphing their solution set
Competency 8: The student will demonstrate knowledge of equations in two variables by:
1. Recognizing and graphing equations that represent circles 2. Writing the equation of the circle given the center and radius 3. Determining the distance between two points and midpoint coordinates

Miami Dade College

MAC 1105 College Algebra

As graduates of Miami Dade College, students will be able to:

1. Communicate effectively using listening, speaking, reading, and writing skills.
2. Use quantitative analytical skills to evaluate and process numerical data.
3. Solve problems using critical and creative thinking and scientific reasoning.
4. Formulate strategies to locate, evaluate, and apply information.
5. Demonstrate knowledge of diverse cultures, including global and historical perspectives.
6. Create strategies that can be used to fulfill personal, civic, and social responsibilities.
7. Demonstrate knowledge of ethical thinking and its application to issues in society.
8. Use computer and emerging technologies effectively.
9. Demonstrate an appreciation for aesthetics and creative activities.
10. Describe how natural systems function and recognize the impact of humans on the environment.