

Instructor:	Carlos Sotuyo	Ref #:	10851
Office:	3348	Term:	2257
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Day/Time:	Mo-We-Fr 9:15AM - 10:20AM	Room:	Building 4, 4207

MDC Academic Calendar: <https://www.mdc.edu/academics/calendar/>

Last Day to drop with refund (100% refund deadline): Sep. 25 (Thursday)

Last day to withdraw from courses with a "W" grade: Nov. 7 (Friday)

Nov/11 Holiday – Veterans Day -- Nov/ 27& 28 Holiday – Thanksgiving

Class website: <https://mystatclass.com/index.html>

Office Hours: Mo-We-Fr: 10:20 AM – 10:40 AM

Email policy: expect a response within 24 hours, including weekends.

Course Description:

In this course, students will develop problem solving skills, critical thinking, computational proficiency, and contextual fluency through the study of equations, functions, and their graphs. Emphasis will be placed on quadratic, exponential, and logarithmic functions. Topics will include solving equations and inequalities, definition and properties of a function, domain and range, transformations of graphs, operations on functions, composite and inverse functions, basic polynomial and rational functions, exponential and logarithmic functions, and applications. Student learning outcomes: students will solve an equation or an inequality using an appropriate technique; students will define and describe functions, their properties, and graphs; students will manipulate functions to simplify expressions and find new functions; students will use transformations to write an equation for a function and to graph a function; students will model and solve real world problems using functions.

Text and Requirements

College Algebra, 8th edition by Blitzer

MyMathLab will be used to complete assignments.

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 Students who miss two or more classes may be withdrawn from the course.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. Missing two exams? The student will be drop out of the course.

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.

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:

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:

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

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

Only an average of 69, or 79 or 89 are rounded up to 70, 80 and 90 respectively.

Important: Pearson's assignments are due before the corresponding test.

All tests will be administered in the classroom, physically, multiple choice questions, one question extra credit. Missing a test, make-up test last day of the course.

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

	Date	Topic
1	9/22	Linear Equations
2	9/24	Absolute Value Equations
3	9/26	Linear Inequalities and Absolute Value Inequalities
4	9/29	Definition of i , and Operations with Complex Numbers
5	10/01	Solving Equations by Factoring
		Square Root Property and Completing the Square
6	10/03	Quadratic Formula
		Solving Equations Quadratic in Form
7	10/06	Radical Equations
8	10/08	Midpoint Formula, Distance Formula, and the Equation of a Circle
9	10/10	Test 1
10	10/13	Definition of Functions and their Graph
		Functions and their Graph
		Function Notation
11	10/15	Difference of Quotient
		Identifying Even and Odd Functions
		Finding the Domain of a Function
12	10/17	Library of Functions with Shifts
		Reflection about the x – axis and y – axis, and Stretching and Shrinking
13	10/20	Piecewise Functions
14	10/22	Composite of Functions and Operations on Functions
15	10/24	Finding the Inverse of a Functions
16	10/27	Test 2
17	10/29	Sketching Quadratic Functions
18	10/31	Applications of Quadratic Functions
19	11/03	Definition of Polynomials and Sketching their Graphs
20	11/05	Vertical and Horizontal Asymptotes
21	11/07	Sketching Rational Functions
22	11/10	Polynomial and Rational Inequalities
23	11/12	System of Linear Equations Substitution Method
24	11/14	System of Linear Equations Addition Method
25	11/17	System of Inequalities
26	11/19	Test 3
27	11/21	Exponential Functions
28	11/24	Logarithmic Functions
29	11/26	Properties of Logarithms
30	12/01	Exponential Equations
31	12/03	Logarithmic Equations

32	12/05	Applications of Exponential Equations
33	12/08	Test 4
34	12/10	Final
35	12/12	Make-up exam

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

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.