Syllabus Guidelines – MAC1105

The instructor for this course will customize this document for their individual course section. Students receive the final course syllabus from the professor assigned to this course.

Course Information

Course Title: College Algebra

Course ID: MAC1105

Course Description: This course introduces the student to the concept of functions and their graphs. The student will learn to graph linear, quadratic, rational, exponential, logarithmic, radical, power, and absolute value functions and their transformations. The student 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 equation, graph non-linear inequalities, and solve related applications and modeling problems. Prerequisite: MAT 1033 with a grade of "C" or better. Fulfills Gordon Rule computational requirement.

Class Number:

Term and Year: Summer 2023

Course Modality: Please refer to modality descriptions - MDC Modalities

Instructor Information

Name:

Department and Campus: Mathematics Department – North Campus

Office location:

Office hours: (*Faculty will communicate course office hours with students)*

Phone number:

Email:

Communication policy: *(Faculty will establish protocols for communication with students)*

Course Competencies

(Course competencies are listed in pages 4-7 for MAC1105)
MDC Course Competencies

Collegewide Student Learning Outcomes

(Learning Outcomes are listed in pages 4-7 for MAC1105)
Learning Outcomes (LO) at MDC

Required Textbook, Course Materials, and Technology

Required course materials:

- *Algebra & Trigonometry*, Sullivan, 11th Edition, Pearson Publishing Company, MyLab and eBook with instant access ISBN: **9780135962121.**
- Regular Scientific Calculator (e. g. TI-30XIIS, Casio fx-300MS)

List optional/supplemental materials/OER: *Determined by the instructor.*
Technology & Technical Skill Requirements: Please refer to the LMS Requirements and Plugin Information at the College website. Mozilla Firefox is the recommended browser and headsets / microphone are needed for participation in web-conferencing activities through Canvas. *External webcam* maybe required by your instructor as well as the use of software such as *LockDown Browser* or the use of third-party companies for proctoring exams. In addition, Microsoft Office applications such as Word, Excel and PowerPoint are standard for MDC College courses. Due to the necessity of technology in MDC College Courses, you must have a backup plan for using an alternative computer with internet access in case of problems with your personal computer. If you live in the South Florida area, you may use the computer courtyards located on MDC campuses. If you have a technology problem that affects your ability to access your course, please notify your instructor immediately. If you can access other internet sites but cannot access your online course, you need to contact the Help Desk at 305.237.3800 to seek assistance. Canvas Student Support: Direct number: Dial 305-237-9800 (option 1).

Grading Policy & Assessment Methods

The assessments include Unit Exams, a Final Exam, and Homework. Verify with your instructor the number of assessments and their corresponding weight in the class.

Miami Dade College's Letter Grades	
Range	**Letter Grade**
90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
59 and below	F

Incomplete Grades: Refer to MDC incomplete grades policies: Incomplete Grades

Miami Dade College Policies

Attendance Policy: *(Faculty will include precise statements about illnesses/emergencies/ tardiness, missed assignments/make-up.)*

Students Rights and Responsibilities: Students' Rights and Responsibilities - *policies addressing academic integrity and plagiarism, code of conduct, grade appeals, religious observations, services for students with special needs, student complaints, and other.*

Available Support Services & 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

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.

Miami Dade College

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MAC 1105 **COLLEGE ALGEBRA**

Course Description:

This course introduces the student to the concept of functions and their graphs. The student will learn to graph linear, quadratic, rational, exponential, logarithmic, radical, power, and absolute value functions and their transformations. The student 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 equation, graph non-linear inequalities, and solve related applications and modeling problems. Prerequisite: MAT 1033 with a grade of "C" or better. Fulfills Gordon Rule computational requirement.

Course Competency	Learning Outcomes
Competency 1: The student will demonstrate knowledge of absolute value equations and inequalities by:	Critical thinking Numbers / Data Information Literacy
1. Solving absolute value equations 2. Solving absolute value inequalities	
Competency 2: The student will demonstrate knowledge of complex numbers by:	Critical thinking Numbers / Data Information Literacy
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:	Communication Information Literacy Numbers / Data Critical thinking Social Responsibility
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:	Communication Information Literacy Numbers / Data Critical thinking Social Responsibility
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:	Information Literacy Social Responsibility Critical thinking Numbers / Data Communication
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:	Numbers / Data Communication Social Responsibility Information Literacy Critical thinking
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:	Numbers / Data Information Literacy Critical thinking
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:	Information Literacy Numbers / Data Critical thinking

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	

Updated: FALL TERM 2018