BRONX COMMUNITY COLLEGE
of the City University of New York
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SYLLABUS

MTH 28 – College Algebra and Elementary Trigonometry (3 credits, 4 hours per week)
Prof. Jorge Pineiro   **Email: jorge.pineiro@bcc.cuny.edu**
Prerequisite: CUNY Math Proficiency

Textbooks: 1. Intermediate Algebra 2e, by Lynn Marecek and Andrea Honeycutt Mathis, OpenStax
https://openstax.org/details/books/intermediate-algebra-2e

2. Precalculus by Jay Abramson, OpenStax
https://openstax.org/details/books/precalculus

Course Description: Fundamentals of intermediate and college algebra essential for the study of pre-calculus and calculus. Topics include factoring, roots and radicals, rational expressions, quadratic equations, the function concept, and the trigonometric ratios.

This course is a **Pathways Core B (Mathematical and Quantitative Reasoning) Course**:
This course meets the following learning outcomes. A student will:
   a) Interpret and draw appropriate inferences from quantitative representations, such as formulas, graphs, or tables.
   b) Use algebraic, numerical, graphical, or statistical methods to draw accurate conclusions and solve mathematical problems.
   c) Represent quantitative problems expressed in natural language in a suitable mathematical format.
   d) Effectively communicate quantitative analysis or solutions to mathematical problems in written or oral form.
   e) Evaluate solutions to problems for reasonableness using a variety of means, including informed estimation.
   f) Apply mathematical methods to problems in other fields of study.

Student Learning Outcomes: Upon completion of this course, students will be able to:

1. Perform operations of polynomials, rational expressions, radical expressions, and expressions with rational exponents (a, b, d)
2. Solve rational equations, radical equations, and factorable polynomial equations (b, d, e)
3. Solve quadratic equations by factoring, by completing the square, and by the quadratic formula (b, d, e)
4. Demonstrate fluency with function notation. Identify whether a given arrow diagram or algebraic relation represents a function and analyze it to determine its properties such as domain and range (a, c, d)
5. Translate word problems involving modeling with functions and quadratic equations (c, d, f)
6. Solve right triangle trigonometry problems (a, b, d, e)
7. Form models to apply them in the solution of real-world problems involving trigonometry (a, c, d, f)

Pathways: This course satisfies CUNY Pathways Required Core Area B (Mathematical and Quantitative Reasoning).

Grading Guidelines:

Homework:	15%
Class participation:	10%
Quizzes or tests:	20%
Midterm:	25%
Final Exam:	30%

Additional details will be provided by your instructor.

Academic Integrity: Academic dishonesty (such as plagiarism and cheating) is prohibited at Bronx Community College and is punishable by penalties, including failing grades, dismissal and expulsion. For additional information and the full policy on Academic Integrity, please consult the BCC College Catalog.

Accommodations/Disabilities: Bronx Community College respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of a disability, please contact the disAbility Services Office as soon as possible this semester. The disAbility Services specialists will meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations for this course. You can reach the disAbility Services Office at: disability.services@bcc.cuny.edu, Loew Hall, Room 211, (718) 289-5874.

	SECTION AND TOPICS	RECOMMENDED EXERCISES[1]
Intermediate Algebra 2e text		
Week 1	3.5 Relations and Functions	328/299-302, 307-332
	6.1 Greatest Common Factor and Factor by Grouping	582/9-50
	6.2 Factor Trinomials	600/61-130, 135-152
Week 2	6.3 Factor Special Products	615/159-190, 213-220
	6.4 General Strategy for Factoring Polynomials	625/233-246, 249-256
	6.5 Polynomial Equations	641/277-326
Week 3	7.1 Multiply and Divide Rational Expressions	666/1-24, 29-44, 49, 50
Week 4	7.2 Add and Subtract Rational Expressions	682/75-142
Week 5	7.3 Simplify Complex Rational Expressions	695/151-194
	7.4 Solve Rational Equations	709/197-230
Week 6	**Midterm Review and Exam**	
Week 7	8.1 Simplify Expressions with Roots	771/1-15, 19-22
	8.2 Simplify Radical Expressions	789/55-65
Week 8	8.3 Simplify Rational Exponents	805/119-162
	8.4 Add, Subtract, and Multiply Radical Expressions	818/165-168, 183-186, 191-214(only ⓐ)
Week 9	8.5 Divide Radical Expressions	832/245, 246, 259-262, 271-282
	8.6 Solve Radical Equations	846/287-304, 315-326
Week 10	8.8 Use the Complex Number System	868/409-412
	9.1 Solve Quadratic Equations Using the Square Root Property	893/1-30
Week 11	9.2 Solve Quadratic Equations by Completing the Square	909/75-101
	9.3 Solve Quadratic Equations Using the Quadratic Formula	923/113-136
Precalculus text		
Week 12	5.1 Angles	455/26-42
Week 13	5.4 Right Triangle Trigonometry	495/10-41, 52-56
Week 14	**Final Review**	

---

[1] The instructor will provide additional details on assignments.