Department of Mathematics

MTH 136 Intermediate Algebra and Trigonometry

Class Information			
Instructor	Cesar Valverde	Term/Section	Fall 2024/
Office Location	AB1 L05D	Class Meeting Days	M W
Office Phone E-mail	cvalverde@mec.cuny.edu x 6427	Meeting Time Location	1 – 2:40 in C07
Office Hours	W 4:40 – 5:40		

I. Course Description

The course topics are equations and inequalities, rational and radical expressions, polynomials, linear and quadratic equations and systems of equations, graphing, the basic conic sections, and right triangle trigonometry with applications. Students will explore applications in geometry, physical science, and business. Also, they learn how to use a scientific calculator to understand accuracy, significant figures, and different forms of real numbers. Written solutions in problem-solving is emphasized.

II. Course Prerequisites

Achieve a score of 60 or above on the CUNY Proficiency Index (CPI).

III. Course Credits

3 credits; 4 class hours

IV. Texts and Materials

a) Intermediate Algebra, 4th Edition by Charles P. McKeague
b) A scientific calculator (non-graphing).

V. Course Objectives / Student Learning Outcomes (SLOs)

The table below summarizes the objectives of this course as achievable learning outcomes.

Student Learning Outcomes	Required Core Mastery
Be able to apply basic mathematical operations (+, -,*, /) on whole, rational, and irrational expressions	Understand the real numbers and algebraic operators
Be able to recognize, reduce, solve, or evaluate functions involving linear, quadratic, rational, radical, and exponential expressions.	Understand the properties of algebra
Be able to solve linear, quadratic, rational, and radical equations, and systems of linear equations.	Recognition of algebraic equations and systems of equations
Be able to **read, interpret, and translate** word problems into equivalent mathematical equations.	Mathematical literacy—definitions, symbols, writing solutions.
Be able to identify the parameters, equations, and graphs of basic conic sections and the right triangle; evaluate right triangle trigonometric functions	Recognition of geometric shapes, their properties, and standard forms.

Table 1. Students who master these goals will be prepared for the next level mathematics course.

VI. Course Schedule Overview

Class No.	Chapter	Section
1	**Chapter 1** Equations, Inequalities, and Mathematical Models: Graphs of Equations, Linear Equations in One Variable, Modeling with Linear Equations, and the Absolute Value Equations	1.1, 1.2
2		1.3, 1.4
3		1.5
4		1.6
5	**Chapter 2** – Graphs of Equations, Inequalities, and Functions	2.1, 2.2
6		2.3, 2.5, 2.6
7	**Chapter 3** – Systems of Equations and Applications	3.1
8		3.5
9	**Chapter 4** – Exponents and Factoring Polynomials	4 .1, 4.2
10		4 .3, 4.4
11		4.5, 4.6, 4.7
12	**Department Midterm Exam**	**TBA**
13	**Chapter 5**– Rational Expressions, Equations, and Functions	5.1, 5.2
14		5.3
15		5.5, 5.7
16	**Chapter 6** – Rational Exponents and Radicals	6.1, 6.2
17		6.3, 6.4
18		6.5, 6.6
19	**Chapter 7**– Quadratic Equations and Functions Quadratic Formula and Form	7.1
20		7.2
21	**Chapter 8** – Exponential Functions and Applications	8.1
22	**Chapter 9** -Conic Sections: Circles and Parabolas	9.1
23		9.2
24	**Trigonometry**- Right Triangle Trigonometry and Applications	Reference or Notes provided
25		
	Department Final Exam	**TBA**

Table 2. Course topics and schedule.

The final grade is based on weighted percentages of the following categories: quizzes (40%), midterm and final (25% each), class participation/attendance (10%).