PARKLAND COLLEGE

Course Information Form (CIF)

Course Code: MAT 098

Course Title: Intermediate Algebra

Department: Mathematics
PCS Code: 1.4 - Remedial Education
CIP Code: 32.0104
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 5-0-5
Credit Hour Distribution:

Lecture: 5	Lab: 0	Clinical: 0	**Total: 5**

General Course Information

Catalog Description

Relations, functions, graphs and their analysis, polynomials and factoring, radicals, quadratic equations and inequalities, algebraic fractions, quadratic functions, modeling and applications.

General Course Objectives

To teach students the fundamentals of intermediate algebra and to prepare students for MAT 105, MAT 107, MAT 108, or MAT 124.

Minimum Placement Levels

English	Reading	Math
None	None	None

Prerequisites

Credit in MAT 072 with a grade of C or higher, or placement

Methods of Evaluation

5 exams, 6-10 quizzes, homework, and a cumulative final exam.

Instructional Materials and Additional Supplies

Intermediate Algebra, 6th Edition by Miller, O'Neal, and Hyde; McGraw Hill, 2022 (or ALEKS). 978-1-260-72823-1
Required: TI-83 Plus/TI-84 Plus graphics calculator; $85-$120

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Simplifying Expressions, Solving Linear Equations, Writing Equations of Line and Interpreting Applications of Slope, Solving Absolute Value Equations and Inequalities	1. Evaluate an expression using the order of operations. 2. Solve linear equations, including applications of linear equations. 3. Write linear equations given two points and interpret slope of a line. 4. Solve linear equations. Solve absolute value equations and inequalities.	16	0	0
Solving Linear Systems, Identifying Functions and Relations, Linear Functions, Absolute Value Functions, Quadratic Functions, Properties of Integer Exponents	1. Solve systems of linear equations. 2. Determine the intercepts of a line. 3. Determine the intercepts of a graph of an absolute value function. 4. Distinguish between linear and quadratic functions. 5. Identify graphs of linear, absolute value, and quadratic functions. 6. Simplify expressions using the product and power rules of exponents. 7. Simplify expressions involving zero and negative exponents.	10	0	0
Addition, Subtraction, Multiplication, Division, and Factoring Polynomials	1. Add, subtract, multiply, and divide polynomials. Factor the GCF out of a polynomial. 2. Factor by grouping. 3. Use zeros of a polynomial and x-intercepts of a graph to factor a polynomial. 4. Factor trinomials of the forms x^2 + bx + c and x^2 + bxy + cy^2 by trial and error or inspection. 5. Identify a prime trinomial of the form x^2 + bx + c. 6. Factor trinomials of the form ax^2 + bx + c by trial and error or AC methods. 7. Identify a prime trinomial of the form ax^2 + bx + c. 8. Factor perfect square trinomials. 9. Factor the difference of two squares. 10. Factor the sum or difference of two cubes. 11. Solve applications with factorable quadratic equations.	11	0	0
Rational Functions, Algebraic Fractions	1. Identify rational functions. 2. Determine the domain of rational functions. 3. Reduce rational functions to lowest terms. 4. Multiply and divide rational expressions. 5. Add and subtract rational expressions. 6. Simplify rational expressions in which order of operations must be determined. 7. Simplify complex fractions. 8. Solve equations involving rational expressions. 9. Solve a rational equation for a specified value. 10. Distinguish between direct and inverse variation. 11. Translate statements of variation. 12. Solve problems involving variation. 13. Solve applied problems that yield equations with fractions.	11	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Square Root Functions, Cube Root Functions, and Rational Exponents	1. Interpret and use radical notation. 2. Add and subtract radical expressions. 3. Simplify radical expressions. 4. Multiply radical expressions. 5. Divide and simplify radical expressions. 6. Solve equations involving radical expressions. 7. Interpret and use rational exponents. Use the properties of exponents.	8	0	0
Solving Quadratic Equations, Applications of Quadratic Equations, and Complex Numbers	1. Solve quadratic equations by extraction of roots. 2. Use the product and quotient rules to simplify radicals. 3. Determine the constant term in a perfect square trinomial. 4. Solve quadratic equations by completing the square. 5. Use the quadratic formula to solve quadratic equations. 6. Use the discriminant to determine the nature of the solutions of a quadratic equation. 7. Use quadratic equations to solve word problems. 8. Use the Pythagorean theorem. 9. Express complex numbers in standard form. 10. Add, subtract, multiply, and divide complex numbers. 11. Solve an equation with imaginary solutions. 12. Determine the vertex of a parabola. 13. Sketch the graph of a quadratic function and determine key features resulting in a parabola. 14. Solve problems involving minimum or maximum values. 15. Sketch the graph of a quadratic function and determine key features resulting in a parabola. 16. Solve problems involving minimum or maximum values.	6	0	0
Review and Tests	1. Earn at least a 70 percent on each of five, hour exams and the cumulative final exam.	13	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
75	0	0