

Elementary Algebra Foundation, K095, CRN 12067

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Location of Office Hours: T.A.S.C.

Class Hours: Monday/Wednesday and by appointment 1:30-2:45pm

Class Room: D212

Prerequisite

There is no prerequisite in order to take this course.

Required Material

In this course you will need a book which is Elementary and Intermediate Algebra, by Stefan Baratto, Barry Bergman, Don Hutchison, 5th edition, Publisher: McGraw-Hill Education. A notebook and something to write with. In order to succeed in this class these things are a must.

Course Description

This developmental course prepares you for college level courses. The course develops understanding of number systems, different representations of numbers, operations on numbers, including numbers expressed in scientific notation. The course introduces functions, their graphs, modeling relationships between quantities using functions. Topics also include solving equations and expressions with integer exponents, radicals, solving, analyzing and modeling linear equations, systems of linear equations, Pythagorean Theorem and geometrical formulas are used to solve real world problems.

Evaluations

Quizzes/Homework/Alek 25%, Exams 50%, and Final Exam 25%.

Grading Policy

This is how the grade will be scale in the class. There will be **NO CURVE**. However, I will **not stop and deny you** if you want to improve your grade, meaning you are allow to do retakes as many times as you want, (just be aware that it will be harder compare to your previous one). Below is the measurements for the minimum/maximum for each letter grade.

- From 93 → 100 \implies A 92 → 90 \implies A-
- From 89 → 87 \implies B+ 86 → 83 \implies B 82 → 80 \implies B-
- From 79 → 77 \implies C+ 76 → 73 \implies C 72 → 70 \implies C-
- From 69 → 67 \implies D+ 66 → 63 \implies D 62 → 60 \implies D-
- From 59 → 0 \implies F

Class Cancellation

In case of increment weather, check the college website for class cancellations or call 860-215-9000 for recorded message.

During Class

I WILL NOT TOLERATE the use of electronics in this class, **EXCEPT** if this is an accomadation. Please refrain from using computers for anything but activities related to the class. Phones are prohibited as they are rarely useful for anything in the course. Eating and drinking are allowed in class but please refrain from it affecting the course. Try not to eat your lunch in class as the classes are typically active.

Attendance Policy

It is **VERY IMPORTANT** you attend class because if you do not you will see the outcome of it at the end of the semester and also it might impact your **FINANCIAL AID**, so please be mindful of that. Attendance

is expected in all lecture. Valid excuses for absence will be accepted before class. In extenuating circumstances, valid excuses with proof will be accepted after class. For every class missed your knowledge about the subject will be decreasing, and in term of moving forward it will be difficult in your part. It is **YOUR RESPONSIBILITY** to find what you miss **NOT MINE**. Your life, your choice, and your education.

Academic Integrity and Honesty

At TRCC, we expect the highest standards of academic honesty. All students are expect to demonstrate integrity in the completion of their coursework. Academic integrity means doing one's own work and giving proper credit to the work and ideas of others. It is the responsibility of each student to become familiar with what constitutes academic dishonesty and plagiarism and to avoid all forms of cheating and plagiarism. Students who engage in plagiarism and other forms of academic misconduct will face academic and possibly disciplinary consequences. Academic sanctions can range from a reduced grade for the assignment to a failing grade for the course. From a disciplinary standpoint, an Academic Misconduct Report may be fill and a Faculty Hearing Board may impose sanctions such as probation, suspension or expulsion.

Accommodations for Disabilities

If you have a disability that may affect your progress in this course, please meet with a Disability Service Provider (DSP) as soon as possible. Please note that accommodations cannot be provided until you provide written authorization from a DSP.

College Disabilities Service Provider:

- Matt Liscum, Counselor he can be reach at (860) 215-9265, and his office is at Room A113. He will be able to provide service for people that has learning disabilities, ADD/ADHD, Autism Spectrum, and Mental Health Disabilities.

- Elizabeth Wilcox, Advisor, she can be reach at (860) 215-9289, and her office is at Room A113 as well. She will be able to help people with medical, mobility, and sensory disabilities.

Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and TRCC policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and TRCC policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. CT State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at **STUDENT HANDBOOK** Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office.

Digication Statement

All students are required to maintain an online learning portfolio in Digication that uses the college template. Through this electronic tool, students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her earning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which will provide additional learning opportunities. If desired, students will have the option to create multiple portfolios.

Course Objectives

Upon completion of the course, student should be able to:

1. Simplify, multiply, divide, add and subtracting fractions, real numbers.
2. Write a product of like factors in exponential form, evaluate exponential expressions, and use the order of operations to evaluate expressions.
3. Use the symbols and language of algebra, identify algebraic expressions, uses algebra to model application. And use expressions to solve applications.
4. Use the vocabulary associated with algebraic expressions, combine like terms, add and subtract algebraic expressions.
5. Use the multiplication property to solve equations and applications.
6. Use inequality notation, graph the solution set of a linear inequality, and solve a linear inequality.
7. Solve a formula for any variable, applications involving geometric figures, and motions problems.
8. List the elements of a set in roster form, use set-builder notation to describe a set, use interval notation to describe a set, and find the union and intersection of sets.
9. Determine the coordinates of a plotted point, plot ordered pairs, scale the axes of a graph.
10. Identify the domain and range of a relation, determine whether a relation is a function, evaluate a function, and use function notation to write an equation.
11. Use the vertical line test, identify the domain and range of a relation from its graph, read function values from a table, and read function values from a graph.

12. Find the slope of a line, find the slope and y-intercept of a line from an equation, write the equation of a line given its slope and y-intercept, and graph a linear equation.
13. Determine whether lines are parallel or perpendicular, write an equation for a line from its slope and a point or two points, and an equation of a line based on geometric conditions.
14. Graph a linear inequality in two variables, and a region defined by linear inequalities.
15. Solving system of equations by graphing, and classify systems of equations.
16. Rewrite a linear equation in one variable, find and interpret the point of intersection of functions.
17. Use addition, substitution, and graphing method to solve system of equations.
18. Use exponential notation, and simplify exponential expressions.
19. Use zero as an exponent, simplify expressions with negative exponents, use scientific notation to write numbers, and solve applications involving scientific notation.
20. Classify polynomials, find the degree of a polynomial, write polynomials in descending order, add and subtract polynomials.
21. Find the product of a monomial and a polynomial, the product of two binomials, square a binomial, and find the product of two binomials that differ only in sign.
22. Divide a polynomial by a monomial, and find the quotient of two polynomials.
23. Evaluate expressions containing radicals, estimate radical expressions, and simplify expressions containing radicals.
24. Apply the Pythagorean Theorem, use the distance formula, and write the equation of a circle and sketch its graph.

Course Content

Chapter 0: Pre-Algebra Review

1. Sec. 0.1 a review of fractions
2. Sec. 0.2 Real numbers
3. Sec. 0.3 Adding and Subtracting
4. Sec. 0.4 Multiplying and Dividing
5. Sec. 0.5 Exponents and order of Operations

Chapter 1: Arithmetic to Algebra

1. Sec. 1.1 Transition to algebra
2. Sec. 1.2 Evaluating Algebraic Expressions
3. Sec. 1.3 Simplifying Algebraic Expressions
4. Sec. 1.4 Solving Equations with the Addition Property
5. Sec. 1.5 Solving Equations with the Multiplication Property
6. Sec. 1.6 Combining the Rules to Solve Equations
7. Sec. 1.7 Linear Inequalities

Chapter 2: Functions and Graphs

1. Sec. 2.1 Formula and Problem Solving
2. Sec. 2.2 Sets and set notations
3. Sec. 2.3 Two Variable Equations
4. Sec. 2.4 the Cartesian Coordinates System
5. Sec. 2.5 Relations and Functions
6. Sec. 2.6 Tables and Graphs

Chapter 3: Graphing Linear Functions

1. Sec. 3.1 Graphing Linear Functions

2. Sec. 3.2 the Slope of a line

3. Sec. 3.3 Linear Equations

Chapter 4: System of Linear Equations

1. Sec. 4.1 Graphing System of Linear Equations

2. Sec. 4.2 Solving Equations in one variable graphically

3. Sec. 4.3 Systems of Equations in two variable.

Chapter 5: Exponents and Polynomials

1. Sec. 5.1 Positive integer Exponents

2. Sec. 5.2 Integer Exponents and Scientific Notation

3. Sec. 5.3 An introduction to Polynomials

4. Sec. 5.4 Adding and Subtracting Polynomials

5. Sec. 5.5 Multiplying Polynomials

6. Sec. 5.6 Dividing Polynomials

Chapter 7: Radical and Exponents

1. Sec. 7.1 Roots and Radicals

Practice Problems

Tentative HW assignments (Odd problems only):
Course Outline, Schedule, Homework (This is a guide only. Assignments and schedules may vary).

Chapter 0: Pre-Algebra Review

1. 0.1 Review of fractions, p.10: 1 - 91
2. 0.2 Real Numbers, p.19:1 - 69
3. 0.3 Adding and subtracting real numbers, p.28: 1 - 73
4. 0.4 Multiplying and dividing real numbers, p.39:1 - 77
5. 0.5 Exponents and Order of Operations, p.48: 1 - 75

Chapter 1: Arithmetic to Algebra

1. 1.1 Algebraic Expressions, p.63: 1, 5, 7, 19, 21, 25, 27
2. 1.2 Evaluating algebraic expressions, p.75: 1-21
3. 1.3 Simplifying Algebraic Expressions, p.87: 27-67, 81-89
4. 1.4 Solving equations using addition property, p.102: 41-61, 71 -77
5. 1.5 Solving equations using multiplication property, p. 113: 13-39, 59-63
6. 1.6 Combining the rules to solve equations, p.126: 11-59, 73,75,85,87
7. 1.7 Linear inequalities, p.141: 25-33,38-55

Chapter 2: Functions and Graphs

1. 2.1 Formulas and problem solving, p.161: 1-21, 31-35
2. 2.2 Sets and set notation, p.175: 15-27,35-43,
3. 2.3 Two-variable equations, p.186 1,7,15,17
4. 2.4 The Cartesian coordinate system, p. 198: 1-21,35,39, 51
5. 2.5 Relations and Functions, p. 212: 17-21, 33, 3741-47

6. 2.6 Tables and graph, p. 226: 7-21, 45-49

Chapter 3: Graphing Linear Functions

1. 3.1 Graphing linear Functions, p.256: 1,3,7, 11, 21, 23

2. 3.2 The Slope of a line, p.279: 7-15, 19-41, 47-51, 55, 59

3. 3.3 Linear equations, p. 294: 1,3,5,11-21, 23-31, 33-43

Chapter 4: System of Linear Equations

1. 4.1 Systems of Linear equations, p.347: 5 - 23, 25-31, 33-38

2. 4.2 Solving systems in one variable graphically, p. 358: 1-9

3. 4.3 Solving systems in 2 Variables, p. 373: 1-25, 33,35, 51-55

Chapter 5: Exponents and Polynomials

1. 5.1 Positive Integer Exponents, p. 414: 1-51

2. 5.2 Integer Exponents and Scientific notation, p. 427 : 1-35, 83, 89, 91,97, 105, 107

3. 5.3 An introduction to Polynomials, p.436: 1 -15, 37

4. 5.4 Adding and subtracting Polynomials, p.444: 11, 17, 23, 31, 37

5. 5.5 Multiplying Polynomials, p.455: 1-19, 25-37, 49-53, 61-67

6. 5.6 Dividing Polynomials, p.465: 1-19

Chapter 7: Radical and Exponents

1. 7.1 Roots, radicals, Pythagorean Theorem, p.560: 1-9, 59-63