Elementary Algebra Foundations MAT K095I, CRN 12857, Spring 2018, MW 4:30-5:45 PM, & 6:00 -7:15PM Room B116

Instructor – Marcorel Atilus Email: matilus@trcc.commnet.edu

Office Hours: Monday/Wednesday 4:00pm-4:25pm, Room D205-2 or immediately after class

Pre-requisite: **Multiple measures**

Text: Elementary and Intermediate Algebra – 5th Edition -- Baratto - Bergman

Course description: 6 CREDIT HOURS

This Elementary Algebra course prepares students for college level courses. Designed to build understanding and skills in algebra, it also provides embedded pre-algebra support. The course develops understanding of number system, different representations of numbers, operations on numbers, including numbers expressed in scientific notation. The course introduces functions, their graphs, modeling relationship 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 geometric formulas are used to solve real world problems.

Method of Evaluation

a) Quizzes
b) Homework Assignments
c) Chapter Tests
d) ALEKs
e) Project
f) Final Exam

Quizzes

The quizzes will be given at the beginning of the class. There will be thirteen 10-point quizzes (the lowest three quizzes will be dropped and the remaining 10 quizzes will be counted as a test grade) Quiz times are between 10 and 15 minutes (depending on the level of the quiz). Students who arrive late and the quiz is still in progress will be able to take the quiz, but will need to turn in the quiz at the quiz due time. Students who arrive to class late, after the quiz time ends, will not be permitted to take the class quiz. Please plan to arrive to class on time each day.

Homework Assignments

Homework assignments for each chapter will be due on that chapter test date at the beginning of the class and at the end of the session, the homework assignments will be counted as a test grade.

Tests

There will be 4 chapter tests **+ Final Exam**

ALEKs

Complete all of your ALEKs assignments on time

Project

There will be a group project

Final Exam

The final exam is comprehensive

Course Evaluation

Tests will constitute 40% of the course grade, quizzes are worth 10%, homework assignments are worth 10%, ALEKs is worth 10%, Group Project is worth 10% and final exam is worth 20% of the course grade

A 93 – 100, A- 90 – 93, B+ 87 -89, B 83 – 86, B- 80 – 82, C+ 77 – 79, C 73 – 76, C- 70 – 72, D+ 67 – 69. D 63 – 66, D- 60 – 62, F below 60, N if the student completed less than 60% of work

Attendance: It is very important that you attend **ALL** classes. Your attendance in the Classroom, participation in classroom work /projects and preparation for each class is required and is essential to your success in the course.

Support Services: Tutorial services. Meeting with me for an extra help.

Class Cancellation: In case of inclement weather, check the college website for class cancellations or call 860-215-9000 for recorded message on the college phone.

Plagiarism and Academic Honesty:

At TRCC, we expect the highest standards of academic honesty. The Board of Trustees' Proscribed Conduct Policy prohibits cheating on examinations, unauthorized collaboration on assignments, unauthorized access to examinations or course materials, plagiarism.

Alert System: MyCommNet Alert is a system that sends text messages and emails to anyone signed up in the event of a campus emergency. Additionally, TRCC sends messages when the college is delayed or closed due to weather. All students are encouraged to sign up for MyCommNet Alert. A tutorial is available on the Educational Technology and Distance Learning Students page of the web site(see the link below).
http://www.trcc.commnet.edu/div_it/educationaltechnology/Tutorials/myCommNetAlert/MIR3.html

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 (860) 215-9265 Room A113	• Learning Disabilities • ADD/ADHD • Autism Spectrum • Mental Health Disabilities
Elizabeth Willcox, Advisor (860) 215-9289 Room A113	• Medical Disabilities • Mobility Disabilities • Sensory Disability

Course Outline, Schedule, Homework (This is a guide only. Assignments and schedules may vary).

Section	Topics	HW
Ch.0	**Review of Pre-algebra**	
0.1	Review of fractions **01/17**	p. 10 1 - 91
0.2	Real Numbers **01/17**	p. 19 1 - 69
0.3	Adding and subtracting real numbers **01/17**	p. 28 1 - 73
0.4	Multiplying and dividing real numbers **01/22**	p. 39 1 - 77
0.5	Exponents and Order of Operations **01/22**	p. 48 1 - 75
Ch. 1	**Arithmetic to Algebra**	
1.1	Algebraic Expressions **01/ 24 QZ #**1	p. 63 1, 5, 7, 19, 21, 25, 27
1.2	Evaluating algebraic expressions **01/29**	p. 75 1-21
1.3	Simplifying Algebraic Expressions **01/29**	p. 87 27-67, 81-89
1.4	Solving equations using addition property **01/31 QZ #2**	p. 102 41-61, 71 -77
1.5	Solving equations using multiplication property **02/05**	p. 113 13-39, 59-63
1.6	Combining the rules to solve equations **02/05**	p. 126 11-59, 73,75,85,87
1.7	Linear inequalities **02/07 QZ #3, Test #1 review**	p. 141 25-33, 38-55
	02/14 Test #1	
Ch. 2	**Functions and Graphs**	
2.1	Formulas and problem solving **02/21**	p. 161 1-21, 31-35
2.2	Sets and set notation **02/21**	p. 175 15-27, 35-43,
2.3	Two-variable equations **02/26 QZ #4**	p. 186 1, 7, 15, 17
2.4	The Cartesian coordinate system **02/28**	p. 198 1-21, 35, 39, 51
2.5	Relations and Functions **02/28**	p. 212 17-21, 33, 3741-47
2.6	Tables and graphs **03/05 QZ #5, Test #2 review**	p. 226 7-21, 45-49
	03/07 Test #2	
Ch. 3	**Graphing Linear Functions**	
3.1	Graphing linear Functions **03/19**	p. 256 1, 3, 7, 11, 21, 23
3.2	The Slope of a line **03/21**	p. 279 7-15, 19-41, 47-51, 55, 59,
3.3	Linear equations **03/ 21 QZ #6**	p. 294 1, 3, 5, 11-21, 23-31, 33-43
Ch. 4	**Systems of Linear Equations**	
4.1	Systems of Linear equations **03/26**	p. 347 5 - 23, 25-31, 33-38
4.2	Solving systems in one variable graphically **03/26**	p. 358 1-9
4.3	Solving systems in 2 Variables **03/28 Quiz #7, Test #3 review**	p. 373 1-25, 33, 35, 51-55
	04/02Test #3	
Ch. 5	**Exponents and Polynomials**	
5.1	Positive Integer Exponents **04/04**	p. 414 1-51
5.2	Integer Exponents and Scientific notation **04/09**	p. 427 1-35, 83, 89, 91, 97, 105, 107
5.3	An introduction to Polynomials **04/11 QZ #8**	p. 436 1 -15, 37
5.4	Adding and subtracting Polynomials **04/16**	p. 444 11, 17, 23, 31, 37
5.5	Multiplying Polynomials **04/16**	p. 455 1-19, 25-37, 49-53, 61-67
5.6	Dividing Polynomials **04/18 QZ #9, Test #4 review**	p. 465 1-19
	04/23 Test #4	
Ch.7	**Radicals and Exponents 8/16 & Final Exam Review**	
7.1	Roots, radicals, Pythagorean Theorem 04/25, **Final Exam Review**	p. 560 1-9, 59-63
	Final Exam will be on 04/30/2018	

COURSE OUTCOMES:

1. **Rational Numbers – At the end of this course, a student should be able to**

   a) Identify and distinguish between rational and irrational numbers

   b) Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2, $\sqrt{8}$)

2. **Expressions and Equations with Polynomials, Rational and Radical Expressions, and Integer Exponents – At the end of this course, a student should be able to**

   a) Interpret parts of an expression, such as terms, factors, and coefficients and evaluate expressions for a given replacement value(s)

   b) Add, subtract, and multiply polynomials. Divide polynomials by a monomial

   c) Construct and interpret equations as two expressions set equal to each other

   d) Manipulate formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's Law $V = IR$ to highlight resistance R

   e) Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = \frac{1}{3^3} = \frac{1}{27}$)

   f) Use square root symbols to represent solutions to equations of the form $x^2 = p$, where p is a positive rational number

   g) Evaluate square roots of perfect squares

   h) Know that numbers such as $\sqrt{2}$ are irrational

   i) Express very large or very small quantities in scientific notation

   j) Perform operations with numbers expressed in scientific notation

3. **Linear Equations in One Variable – At the end of this course, a student should be able to**

   a) Solve linear equations and inequalities in one variable

   b) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms

   c) Create linear equations and inequalities in one variable and use them to solve real world applications

   d) Recognize examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions

4. Linear Equations in Two Variables – At the end of this course, a student should be able to

a) Interpret the rate and unit rate as the slope of the graph

b) Derive the equation $y = mx + b$ for a line intercepting the vertical axis at b *and having a slope of* m

c) Identify parallel and perpendicular lines based on their slopes

d) Graph a linear equation in two variables

e) Construct a linear equation to model a linear relationship between two quantities. Determine and interpret the rate of change and initial value from a description of a relationship or from two (x, y) values, including reading these from a table or graph

f) Construct linear equations given a graph, a description of a relationship, or two input-output pairs (include reading these from a table) using point-slope form and slope-intercept form

5. **Systems of Linear Equations – At the end of this course, a student should be able to**

a) Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs

b) Solve systems of two linear equations in two variables algebraically (using both substitution and addition methods), graphically (by hand and/or technology), Solve simple cases by inspection. *For example,* $3x + 2y = 5$ *and* $3x + 2y = 6$ *have no solution because* $3x + 2y$ *cannot simultaneously be* 5 *and* 6

c) Recognize systems of linear equations with one solution, infinitely many solutions, or no solutions

d) Solve real-world problems leading to two linear equations in two variables

6. **Functions – At the end of this course, a student should be able to**

a) Understand that a function is a rule that assigns to each input exactly one output and that the graph of a function is the set of ordered pairs consisting of an input and the corresponding output

b) Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line

c) Use functions to model linear relationships between quantities

d) Use function notation. Evaluate functions for inputs in their domains

e) Graph linear functions and show intercepts

f) Recognize that linear functions have a constant rate of change and interpret the rate of change in the context of the problem

7. **Applications – At the end of this course, a student should be able to**

a) Apply geometric formulas for two and three-dimensional figures such as rectangles, circles, rectangular solids, cylinders, spheres, etc.

b) Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two dimensions

BOARD OF REGENTS FOR HIGHTER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY

Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:

"The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence."

UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY:

"Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient's educational programs and activities."

If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact Edward A. Derr, the Diversity Officer and Title IX Coordinator:

Edward A. Derr

Title IX Coordinator and Diversity Officer

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