Three Rivers COMMUNITY COLLEGE	MAT* K095 T9 Fall 2018 Instructor: Ms. Brousseau Email: mbrousseau@trcc.commnet.edu

Course Information

Title:	Elementary Algebra Foundations
Section:	T9
CRN:	30137
Credits:	Three TRCC Credits
Room:	E221
Day/Time:	MW 11:00 am-12:15 pm
Office Hours:	M W 10:00-11:00 am Adjunct Faculty Office

Course Description

This Elementary Algebra developmental 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, and modeling relationships between quantities using functions. Topics also include solving equations and manipulating 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.

Required Materials:

- **Required Textbook**: Baratto, Bergman, & Hutchinson *Elementary and Intermediate Algebra,* 5th ed. New York: McGraw-Hill, 2014.
  NOTE: You may choose to use either a physical textbook or an ebook
  If you use an ebook, you must have an electronic device with which to access ebook during all classes
- Scientific calculator
  - NOTE: You may not use the calculator on your phone, iPad, laptop, etc for in class work
  - NOTE: You may not share a calculator with a classmate during any assessment
- 3-ring Binder (recommended to keep course materials organized) with 4 section dividers
- pen and pencil

Academic Integrity

The effective operation of any organization is dependent on the honesty and goodwill of its members. In an organization devoted to the pursuit of knowledge, acting with integrity is essential to effective teaching and learning. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. To emphasize the importance of academic integrity, Three Rivers Community College adheres to the Student Code of Conduct and Discipline Policy, as provided by the Connecticut State Colleges and Universities (CSCU) Board of Regents for Higher Education.

Since collaboration is central to the learning community, Three Rivers wishes to emphasize that this policy is not intended to discourage collaboration when appropriate, approved, and disclosed.

Any willful act of cheating on the part of any student will be reported to the Mathematics Department Chair and subsequently to the Academic Dean.

For further information, see:
http://catalog.threerivers.edu/content.php?catoid=2&navoid=54#Academic_Integrity_Policy

Board of Regents for Higher Education and Connecticut State Colleges and Universities Policy Regarding Sexual Misconduct Reporting, Support Services and Processes Policy:

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."

Title IX Statement of Policy:

"Title IX of the Education Amendments Act of 1972 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 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 educational programs and activities."

Please Report Student Incidents to: Edward A. Derr, Student Diversity and Title IX Coordinator
Admissions Welcome Center * Office A116
574 New London Turnpike, Norwich CT 06360
860.215.9255 * EDerr@trcc.commnet.edu

Other Class Policies:

Cell phones or cell text devices, beepers, music devices are not appropriate in class. They should be turned off (or on vibrate for emergencies) and stored off the class desk. You may not use the calculator on your phone for assessments.
Some students like to take pictures of class notes with their cell phones; this is fine.
If you are using the eBook, you may use an electronic deice of your choice to do so, but this is the ONLY reason for the use of an electronic device during class time. Students who use electronic devices for other purposes will lose one week of points for class participation for the first offense. After that, the class participation grade will be lowered by a full letter grade (10 points)

Attendance

You are expected to attend each class. Essential factors of your success in this course are your attendance and attention to the information shared in each class. I will teach the material only once, therefore, if you miss a class you are responsible to obtain any missed information, notes, homework etc from a classmate. You are responsible for homework being up to date upon your return to class; absence will not be accepted as an excuse for missed homework.

Please do not come in and out of class during class time.

In general, there are ***no makeups***. If there is a problem, speak to me. If you miss a major test (and have a documented reason), you will need to make arrangements for a **make-up test** outside of class time. Arrangements for a make up test must be made **prior to the actual test date** or **within 24 hours of the absence**. Failure to make arrangements within 24 hours of the test will result in a test grade of **ZERO**. A student who is absent from an examination will be given a make-up examination as soon as possible.

No makeups for **QUIZZES** (This includes turning in take-home quizzes late; any out of class assignments will not be accepted late. This also includes any unannounced quizzes or graded classwork)

Special Arrangements

If you have a disability that may require accommodations, services for students with disabilities are coordinated through the Student Development Offices of Student Services or the Counseling Center. In accordance with federal law, the Americans with Disabilities Act of 1992, students with documented disabilities may request reasonable accommodations. Students are required to submit a Self Disclosure Form, provide documentation, and meet with a Disability Service Provider before the start of the semester, if possible. Please call the Counseling Center for more information.
Please provide me with documentation regarding accommodations as soon as possible.

College Withdrawal Policy:

You may withdraw from this class anytime up to and including Sunday, Dec 9, and you will receive a W grade on your transcript. Please note that you must complete a withdrawal form in the Registrar's Office at the time of withdrawal. If you merely stop coming to class, you will be assigned a grade of F or UF, depending on the date you stop attending.

Other College Policies of Importance to you:

Non-Discrimination Policy

Please refer to this site for details:
http://www.trcc.commnet.edu/president/policies/college_policies.shtml#Affirmative

Digication

All students are required to maintain an online learning portfolio in Digication that uses the college template. See this site for further details: **http://www.trcc.commnet.edu/Div_IT/EducationalTechnology/Digication.shtml**

Inclement Weather Delays, Cancellations, and Closings

http://www.trcc.commnet.edu/president/policies/weather.shtml

Please also check email and BlackBoard for any message from me for a possibly cancelled class due to inclement weather.

Course Objectives and Outcomes

At the completion of MAT*095, the student will be able to do the following —

Rational Numbers:

1) Identify and distinguish between rational and irrational numbers.
2) 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, $\sqrt{8}$).

Expressions and Equations with Polynomials, Rational and Radical Expressions, and Integer Exponents:

1) Interpret parts of an expression, such as terms, factors, and coefficients and evaluate expressions for a given replacement value(s).
2) Add, subtract, and multiply polynomials. Divide polynomials by a monomial
3) Construct and interpret equations as two expressions set equal to each other.
4) 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 the resistance, R.
5) Know and apply the properties of integer exponents to generate equivalent numerical expressions.

   For example, $3^2 \times 3^{-5} = 3^{-3} = \frac{1}{3^3} = \frac{1}{27}$
6) Use square root symbols to represent solutions to equations of the form $x^2 = p$, where p is a positive rational number
7) Evaluate square roots of perfect squares
8) Know that numbers such as $\sqrt{2}$ are irrational
9) Express very large or very small quantities in scientific notation
10) Perform operations with numbers expressed in scientific notation

Linear Equations in One Variable

1) Solve linear equations and inequalities in one variable.
2) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
3) Create linear equations and inequalities in one variable and use them to solve real world applications.
4) Recognize examples of linear equations in one variable with one solution, infinitely many solutions or no solutions.

Linear Equations in Two Variables

1) Interpret the rate and unit rate as the slope of the graph.
2) Derive the equation $y = mx + b$ for a line intercepting the vertical axis at b and having a slope of m.
3) Identify parallel and perpendicular lines based on their slopes.
4) Graph a linear equation in two variables.
5) 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.
6) Construct linear equations given a graph, a description of a relationship, or two input-output pairs (including reading these from a table) using point-slope form and slope-intercept form.

Course Objectives and Outcomes, continued

At the completion of MAT*095, the student will be able to do the following —

Systems of Linear Equations

1) Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs.
2) Solve systems of two linear equations in two variables algebraically (using both substitution and addition methods) graphically (by hand and/or using technology). Solve simple cases by inspection. (For example, $3x + 2y = 5$ and $3x + 2y = 6$ has no solution because $3x + 2y$ cannot simultaneously be 5 *and* 6).
3) Recognize systems of linear equations with one solution, infinitely many solutions, or no solutions.
4) Solve real-world problems leading to two linear equations in two variables.

Functions

1) Understand that a function is a rule that assigns to each input value exactly one output and that the graph of a function is the set of ordered pairs consisting of an input and the corresponding output
2) Interpret the equations $y = mx + b$ as defining a linear function, whose graph is a straight line.
3) Use functions to model linear relationships
4) Use function notation. Evaluate functions for given inputs in their domains.
5) Graph linear functions and show intercepts
6) Recognize that linear functions have a constant rate of change and interpret the rate of change in the context of the problem.

Applications

1) Apply geometric formulas for two- and three-dimensional figures such as rectangles, circles, rectangular solids, cylinders, spheres, etc
2) Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two dimensions.

Course Content:

You will be responsible for the following sections of the textbook:

Chapter 0: Prealgebra Review

- 0.1 A Review of Fractions
- 0.2 Real Numbers
- 0.3 Adding and Subtracting
- 0.4 Multiplying and Dividing
- 0.5 Exponents and Order of Operations

Chapter 1: From Arithmetic to Algebra

- 1.1 Transition to Algebra
- 1.2 Evaluating Algebraic Expressions
- 1.3 Simplifying Algebraic Expressions
- 1.4 Solving Equations with the Addition Property
- 1.5 Solving Equations with the Multiplication Property
- 1.6 Combining the Rules to Solve Equations
- 1.7 Linear Inequalities

Chapter 2: Functions and Graphs

- 2.1 Formulas and Problem Solving
- 2.2 Sets and Set Notation
- 2.3 Two-variable Equations
- 2.4 The Cartesian Coordinate System
- 2.5 Relations and Functions
- 2.6 Tables and Graphs

Chapter 3: Graphing Linear Functions

- 3.1 Graphing Linear Functions
- 3.2 The Slope of a Line
- 3.3 Linear equations
- 3.4 Rate of Change and Linear Regression (Objectives 1, 2, and 3 only)

Chapter 4: Graphing Linear Functions

- 4.1 Graphing Systems of Linear equations
- 4.3 Systems of Equations in Two Variables

Chapter 5: Exponents and Polynomials

- 5.1 Positive Integer Exponents
- 5.2 Integer Exponents and Scientific Notation
- 5.3 An Introduction to Polynomials
- 5.4 Adding and Subtracting Polynomials
- 5.5 Multiplying Polynomials
- 5.6 Dividing Polynomials (Objective 1 only)

Chapter 7: Radials and Exponents

- 7.1 Roots and Radicals (Objectives 1, 2, and 4 only)

NOTE: This is the order in which the material appears in the textbook, and not the order in which we will necessarily cover the material. Please see "Tentative Calendar Schedule of Topic Coverage"

Evaluation Criteria and Grading Policy

A student's course grade is based upon the following rubric:

Quizzes weighted @ 10%
Homework weighted @ 12%
One major "Quest" weighted @7%
3 exams weighted @ 12% each
Final Exam weighted @ 20%
In class activities weighted @ 9%
Class participation weighted @ 6%

The **FINAL COURSE AVERAGE** will be translated into a letter grade in accordance with the grade categories stated below.

If the average is	then final grade is
93 - 100	A
90 – 92	A–
87 – 89	B+
83 – 86	B
80 – 82	B–
77 – 79	C+
73 – 76	C
70 – 72	C–
66 – 69	D+
60 – 65	D
Below 60	F

The prerequisite for moving on to MAT 123S or 137S is a C- or better in this course
The prerequisite for moving on to MAT 137 is a B- or better in this course
The prerequisite for moving on to MAT 123 or 135 is a C or better in this course

HOMEWORK: Remember in a college class **1 hour of class = 2-3 hours** of studying, homework, etc
Best if you do a little every day

Since this class meets for 6 hours each week, this translates into **at least 8-12 hours per week** spent outside of class time reading, taking notes and doing practice problems for this class
(see "Weekly Schedule" available on BlackBoard if you need help organizing your tijme)

You are responsible for completing all homework neatly in your notebook, showing all work. You should always **check your answers in the back of the textbook for each example**. I should be able to see evidence of the fact that you have checked answers. Please come to class prepared with questions on each assignment.

In addition to written homework you will be expected to read the appropriate section(s) of the text (or find an appropriate video online) and complete the "Check Yourself" and "Read your Text" exercises in each section. (See the "Calendar Schedule of Topic Coverage" pages of this syllabus for more details)

CLASSWORK: In class, you will be expected to do some individual work as well as some group work

RESOURCES:

1. See me before class or schedule an appointment with me if you have questions
2. Email me, especially in the Wed- Mon timeframe when we do not meet for 4 days
3. Form a study group with class mates; exchange contact information
4. TASC (The tutoring and Writing Center) provides free one-to-one or group tutoring

CONTACT: All contact with me for this course will be via email.

CLASS CONDUCT:

1. Students are expected to be respectful of all persons in the classroom at all times
2. As stated before, unless you are using an electronic device to access the eBook, your cell phone should not be visible anywhere during class time
3. From the TRCC Student Handbook: "The College has the right and responsibility to take appropriate action when a student's conduct directly and significantly interferes with the College's educational mission and the rights of others to pursue their educational objectives in an environment conducive to learning"

   Any action on the part of any student which violates this college policy will result in, at a minimum, the dismissal of the student from the remainder of class that day.