Three Rivers
COMMUNITY COLLEGE

Syllabus (Fall 2019)
MAT 095I – Elementary Algebra
Tues/Thurs   12:30pm – 3:15pm Room D219

Course Information
- **Instructor Information**
  Name: Elisa Santee   Office Hours: TBA
  Office: D219
  Phone: 860-455-0739
  Email: we will use ALEKS email

- **Course Description**
  Prerequisite: ENG* K096 placement
  This course is designed to build understanding and skills in algebra and to provide embedded pre-algebra support. This course develops understanding of number systems, different representations of numbers, and 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; simplifying expressions with integer exponents; using square roots; solving, analyzing, and modeling linear equations; and using systems of linear equations, Pythagorean Theorem, and geometric formulas to solve real world problems. This course does not satisfy a math requirement or an elective in any degree program, nor do its credits count toward graduation.

- **Required Materials**
  - Text: *Pathways to Math Literacy, 5th ed.* by Sobecki & Mercer.
  - Calculator: Scientific calculator (basic arithmetic buttons and square root button)
  - ALEKS 360 software
  - Binder (1.5 inch or larger for portfolio)
  - 5 dividers for portfolio binder
  - Notebook paper

- **Learning Outcomes**
  Upon successful completion of this class a student should be able to:

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, $3^2 \times 3^{-5} = 3^{-3} = \dfrac{1}{3^3} = \dfrac{1}{27}$)
   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

Grading
- **Methods of Evaluation**

  - **Unit Tests (45%)** – You will have 3 unit tests throughout the semester. Test dates are indicated in the calendar. You will have reviews given out before tests. A review is meant to prepare you for the test, not be an exact replica of the test. The reviews will be longer than the test.

  - **Final Exam (15%)** – All MAT 095I sections will take the departmental cumulative final exam. The exam will take place on the last day of class as indicated in the calendar.

  - **Portfolio (10%)** – You will hand in a portfolio at each test and the final exam. You will be given a separate handout describing portfolio requirements.

  - **Homework (20%)** – Homework will be divided into two categories: computer assignments (ALEKS) and hand-in assignments. More details on homework requirements will be given in future handouts.
    - ALEKS (10%)
    - Hand In Assignments (10%)

  - **Classwork (10%)** – Attendance and participation in classwork is required to be successful in this class. Each class you will earn points by showing up on time and being ready at the beginning of class, participating in all aspects of the class, and working for the entire class time.

- **Grading Policies**

  - **Late Work**: Written homework that is due on a day you do not attend class cannot be turned in late. If you send a picture of the homework via email before the beginning of class, you can turn in the hard copy the next class.

  - **Missed Work Make-Up Policy:** If you miss a class, you are responsible for getting the class notes, homework, and any other assignments from another student and completing that work by the next class.

    Make-up exams may be given *with my prior consent*. If you must miss a test/exam, please speak with me before the date of the exam so that arrangements can be made. The test must be completed before the next class meeting.

  - **Extra Credit:** There will be no extra credit assignments.

- **Letter Grade Equivalents**

Grade	Percent of Points Earned
A#	93-100
A-#	90-92
B+#	87-89
B#	83-86
B-#	80-82
C+#	77-79
C#	73-76
C-#	70-72
D#	65-69
F#	Below 65

Classroom Policies

- **Attendance:** Attendance and participation in classwork is required to be successful in this class. Each class you will earn points by showing up on time and being ready at the beginning of class, participating in all aspects of the class, and working for the entire class time.

- **Communication:** All communication will occur by email. Please make sure that you check your TRCC email or set it up to forward to another account. Check your email regularly to be informed of any changes in schedule.

- **Class Cancellation:**
  If school is cancelled, notification of cancellation due to inclement weather will be available by telephone by 6:00 am for daytime classes and by 2:30 pm for evening classes by calling the College's main telephone at (860) 215-9000, pressing 1, and listening to the taped announcement. The College's website will also have announcements available by accessing the www.threerivers.edu home page. The myCommnet Alert Notification System will also be used to deliver important information regarding weather-related class cancellations, via both email messages and text messages, to registered individuals. To register, log on to your myCommnet account at http://my.commnet.edu/ and follow the link to myCommnet Alert.

  If class is cancelled by the instructor, a notice will be placed on the classroom door. If time permits, students may be notified by a message via email.

- **Withdrawal Policy:** You may withdraw from this class any time up to and including November 5 and you will receive a W grade on your transcript. However, you must complete a withdrawal form in the Registrar's Office at the time of withdrawal; *if you*

merely stop attending classes you will be assigned a grade of F. Any eligibility for refund of tuition is based on the date that the registrar receives the withdrawal.

- **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. (Please refer to BlackBoard for the complete statement.)

  Some of the behaviors that will be considered cheating are:
  - Communicating with another student during a quiz or exam
  - Copying material from another student during a quiz or exam or from any assignment being graded
  - Allowing another student to copy from your quiz, exam, or any assignment being graded
  - Use of unauthorized assistance on any assignment being graded
  - Use of unauthorized notes or books during a quiz or exam
  - Providing or receiving a copy of a quiz or exam used in the course
  - Use of a cell phone or pager to transmit information during a quiz or exam

Tentative Schedule

This is the tentative schedule – instructor reserves the right to change dates throughout the semester. It is your responsibility to attend class to learn of any changes in schedule. Specific homework will be assigned in class.

Class	Content	Tentative Assignments
Day 1	Lesson 1.1	ALEKS – Day 1 Application
Day 2	Lesson 1.2	ALEKS – Day 2 Application
Day 3	Lesson 1.3	ALEKS – Day 3 Application
Day 4	Lesson 1.4	ALEKS – Day 4 Application
Day 5	Lesson 1.5	ALEKS – Day 5 Application
Day 6	Lesson 1.6	ALEKS – Day 6 Application
Day 7	Lesson 1.7	ALEKS – Day 7 Application
Day 8	Test 1 Portfolio Due	ALEKS – Day 8
Day 9	Lesson 2.1	ALEKS – Day 9

		Application
Day 10	Lesson 2.2	ALEKS – Day 10 Application
Day 11	Lesson 2.3	ALEKS – Day 11 Application
Day 12	Lesson 2.4	ALEKS – Day 12 Application
Day 13	Lesson 2.5	ALEKS – Day 13 Application
Day 14	Lesson 2.6	ALEKS – Day 14 Application
Day 15	Test 2 Portfolio Due	ALEKS – Day 15
Day 16	Lesson 3.1	ALEKS – Day 16 Application
Day 17	Lesson 3.2	ALEKS – Day 17 Application
Day 18	Lesson 3.3	ALEKS – Day 18 Application
Day 19	Lesson 3.4	ALEKS – Day 19 Application
Day 20	Lesson 3.5	ALEKS – Day 20 Application
Day 21	Lesson 3.6	ALEKS – Day 21 Application
Day 22	Lesson 3.7	ALEKS – Day 22 Application
Day 23	Lesson 3.8	ALEKS – Day 23 Application
Day 24	Lesson 3.10	ALEKS – Day 24 Application
Day 25	Lesson 3.10	ALEKS – Day 24 Application
Day 26	Test 3 Portfolio Due	ALEKS – Day 26
Day 27	Lesson 4.2 and 4.8	ALEKS – Day 27 Application
Day 28	Polynomials/Exponents	ALEKS – Day 28 Application
Day 29	Review	ALEKS – Day 29
Day 30	Final Exam Portfolio Due	