MAT* K095 Elementary Algebra Foundations Spring 2014

10654 T4 MW 5:00 pm – 6:15 pm D 206

Adjunct Instructor: Lynn S. Moorhouse
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Office Hours: by appointment or before/after class MW, (860)324-8911

REQUIRED MATERIAL:

- Elementary & Intermediate Algebra: Graphs & Models plus MyMathLab/MyStatLab Student Access Code Card, 4th Edition. Bittinger, Ellenbogen, Johnson. Pearson Prentice Hall, 2009. ISBN # 9780321760210 (also, ISBN # 0-32-176021-2)

- Access code for *MyLab*.

- Scientific calculator (must have "*e*" and *"ln"* button)

CALCULATORS: Calculators will be needed for many homework problems and it is REQUIRED that you bring one to **every class** and **each exam**. Cell phones may **NOT** be used as calculators.

COMPUTERS: Online homework will be assigned regularly and will be completed using MyLab and Mastering at **http://pearsonmylab.com**. If you did not purchase a book which has an access code bundled with it, you will have to purchase an access code separately. To register with MyLab, you will need the following information:

Course name: **Elementary Algebra - MAT 095**

Course ID: moorhouse62113

Go to the above website and click on the tab *Student* under "Register". Enter the course ID (see above) under "Enroll in a New Course" then click on *Continue*. If you do not have an access code, you can purchase one now with a credit card by clicking on *Pay with a credit card or PayPal* under Enrollment Options. If you have an access code (inside the cover of a new textbook purchased from the bookstore), you are ready to register, so click *Use an access code* under Enrollment Options. Enter your six word access code when prompted, click *Next*, and follow the prompts to create your own login name and password. **Be sure to remember/record your user name and password. Forgetting your user name and/or password is NOT a valid reason for not completing assignments.** After you have registered, return to the above website and you can now log in. Go to the *Welcome Page*, click on your course, and then choose the *Installation Wizard* link to make sure your computer has the required set-up and plug-ins. **Technical support** for the company is at 1-800-677-6337, Monday through Friday, 9 am – 6 pm.

GRADING:

4 One-Hour Exams:	400 points (100 each)
Final Exam (cumulative):	120 points
Weekly Quizes:	120 points (12 each)
MyMathLab	160 points
Attendance, Homework, &Participation	200 points
Total:	1000 points

Your final grade is the total number of points you have received divided by the total possible number of points. Final grades will be determined using the scale below:

	A →93% and above	**A-**→90 - 92%
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%

Please note: A letter grade of C or higher is required to advance to MAT*K137. A letter grade of C- will **not meet this requirement.**

EXTRA CREDIT: There will be **no** "extra credit" assignments for this course.

ATTENDANCE: Attendance is required and will be taken for each class. An absence is excused ONLY for valid reasons (to be determined by the instructor) and if notification is given **PRIOR** to a missed class (via email or phone message – **not** word of mouth from another student). ***Also, if you miss a class it is **YOUR** responsibility to get the class notes from another student and **BE PREPARED** for the next class meeting (this includes taking the scheduled quizzes).***

CLASS CANCELATION: In the unlikely event that a class needs to be canceled by the instructor, you will be notified by the instructor via email at least one hour prior to the class meeting on the day of the class cancelation.

HOMEWORK AND QUIZZES: Homework is assigned on mathlab for each section and to be done in conjunction with in class work. It is expected that you complete the online assigned problems while we are covering the material in class. Your weekly quizzes will be testing the concepts emphasized from class that week and these homework assignments. We will have at least 12 quizzes throughout the semester.. Make-ups for missed quizzes will be given only in **EXTREME** circumstances and if arrangements are made **PRIOR** to the missed quiz. Any make-up quiz MUST be completed before the next class meeting following the missed quiz. Our expectation is that you are spending 2-3 hours of reading and doing homework for this class for every one hour we meet in class. So, you should expect to spend ***at least* 5-7.5 hours per week** on this class (outside of class meetings), every week!

EXAMS: You will have four in-class exams and one final exam. Exams are scheduled for the following dates: **Exam 1: Wednesday 2/26/14, Exam 2: Due Sunday 3/23/14, Exam #3: Wednesday 4/2/14, Exam 4: Wednesday 4/30/14.** This may change (but hopefully not), depending on how we are doing. Make-ups for exams will be given only in **EXTREME** circumstances and if **PREVIOUS** arrangements are made. No exam will be administered prior to the date/time of the scheduled exam and **if you miss an exam, you will receive a grade of 0 (zero)**.

RETENTION OF PAPERS: Students are expected to retain all graded work until final grades are received.

ACADEMIC DISHONESTY: Academic integrity is essential in all aspects of college coursework and learning. I have zero tolerance for academic dishonesty. It is expected that **YOU** complete all your assigned homework/labs. Communication or collaboration of ANY sort is ABSOLUTEY PROHIBITED during any quiz or exam. Academic Misconduct is punishable in a number of ways, including a score of a zero on the assignment where the cheating took place, a grade of an F in the course and/or possible censure on your permanent record. All cases of academic dishonesty will be referred to the Academic Honor Council. Do not let yourself come under the suspicion of academic dishonesty.

COURSE OBJECTIVES: This course review basic mathematical concepts and introduces elementary algebraic concepts and techniques. It is an extension of the basic algebra skills acquired in MAT* K075. The topics include signed numbers, solving first-degree equations, exponents, polynomials, and factoring, graphing, systems of linear equations, inequalities, radicals, and scientific notation. This course does not count towards the minimum requirements for graduation.

COURSE OUTCOMES:

1. Rational Numbers:

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:

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:

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:

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:

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:

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:

a) Apply geometrical 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

ACCOMMODATIONS: Students with learning disabilities should contact the Learning Specialists, Chris Scarborough at 860-892-5751 or cscarborough@trcc.commnet.edu or Matt Liscum at 860-383-5240 or mliscum@trcc.commnet.edu as soon as possible to ensure timely accommodations.

All testing/quizzing accommodations MUST be discussed with the instructor in a timely manner, that is, *at least* one to two class meetings prior to any scheduled test/quiz for which accommodations are needed.

CELL PHONE POLICY: All cell phones must be turned OFF or MUTED before entering the classroom and properly placed in a bag or pocket (not left on a desk). Any cell phone ringing or beeping during a class is inappropriate and unacceptable. **Texting during class is also inappropriate and will not be tolerated**. Students found texting in class will be asked to leave and will lose their attendance points for that class period.

ACCEPTANCE POLICY: After reading this syllabus, choosing to stay registered for this course exemplifies your acceptance of the syllabus and all policies and consequences outlined in the syllabus, If you do not agree with any of the terms in the syllabus, you are free to withdraw immediately and you have up through September 10, 2013, to register for another section.

The key to success in this course is to attend every class and do all the homework when it is assigned. Ask questions when you have them, either in class or in my office. You will find it much easier to learn the new topics if you consistently keep up with the course material and homework problems!

Class Dates	Chapter(s)	Topics Covered
1/27, 1/29	1.1, 1.8	Course Introduction, Intro to Algebra, Set of Real Numbers, Order of Operations, Algebraic Expressions,
2/3, 2/5	2.1 – 2.4	Solving Linear Equations, More on Solving Linear Equations, Formulas, Applications with Percents, **Quiz #1**
2/10, 2/12	2.5-2.7	Problem Solving, Linear Inequalities in One Variable, Solving Applications with Inequalities, **Quiz #2**
2/17, 2/19		**No Class President's Day**, **Quiz #3,** Chapters 1 & 2, Review
2/24, 2/26	**Exam 1**	Exam 1
3/3, 3/5	3.1 – 3.4	Equations and The Rectangular Coordinate System, Graphing Linear Equations, Rate of Change, **Quiz #4, Quiz #5**
3/10, 3/12	3.5 -3.8	Slope, Slope-Intercept Form, Point-Slope Form, Functions, **Quiz #6, Quiz #7**
3/17, 3/19	**Exam 2**	**SPRING BREAK** , Exam 2 Chapter 3 Online
3/24, 3/26	4.1 - 4.5	Solving Systems of Linear Equations: Graphically, by Substitution, by Elimination, Applications of Systems of Linear Equations, **Quiz #8, Quiz #9**
3/31, 4/2	**Exam 3**	Review on 3/31 and Exam 3Chapter 4
4/7, 4/9	5.1 – 5.4	Product and Power Rule for Exponents, Negative Exponents and Scientific Notation, Polynomial Functions, Addition and Subtraction of Polynomials **Quiz #10**
4/14, 4/16	5.5 - 5.6,	Muliplication of Polynomials, Special Products, **Quiz #11**
4/21, 4/23	5.8	Division of Polynomial by Monomial, Review on 04/23, **Quiz #12**
4/28, 4/30	**Exam 4**	Exam 4 Chapters 5
5/5, 5/7	Review	Review, All makeup work due 5/7
5/12, 5/14		**May 12 Final Withdrawl,** Tentatively **Final Exam 5/14**

The instructor has the right to change/modify this syllabus at any time with proper notification to the class