

## MA 0103 Intermediate Algebra Course Outline

Catalog Description: (MA 0103 is designed to prepare a student for MA 1313 College Algebra)  
Two hours lecture. Two hours laboratory. Real numbers, algebraic expressions, factoring, algebraic fractions, linear equations/inequalities, quadratic equations, Pythagorean Theorem.  
Does not count toward any degree.

Topic / Objectives	Lecture Hours	Lab Hours
I. Review of the Real Number System <ul style="list-style-type: none"> <li>• Simplify expressions involving exponents, roots, and order of operations.</li> <li>• Evaluate algebraic expressions for given values of variables.</li> <li>• Simplify expressions by combining similar terms.</li> </ul>	1	2
II. Linear Equations, Inequalities, and Applications <ul style="list-style-type: none"> <li>• Solve linear equations.</li> <li>• Write equations from given information, then solve.</li> <li>• Use the six steps in solving an applied problem.</li> <li>• Solve problems involving investment, mixture, and uniform motion.</li> <li>• Solve linear inequalities and express answers in interval notation.</li> <li>• Solve compound inequalities.</li> <li>• Solve absolute value equations.</li> </ul>	4	4
III. Graphs, Linear Equations, and Functions <ul style="list-style-type: none"> <li>• Graph a line using a table, the intercepts, or the slope.</li> <li>• Find the slope of a line given two points on the line.</li> <li>• Determine whether two lines are parallel, perpendicular, or neither.</li> <li>• Find the equation of a line in slope-intercept or standard form.</li> </ul>	3	3
IV. Systems of Linear Equalities in Two Variables <ul style="list-style-type: none"> <li>• Solve linear systems ( two equations and two variables) by elimination.</li> <li>• Solve application problems using two variables.</li> </ul>	3	3
V. Exponents, Polynomials, and Polynomial Functions <ul style="list-style-type: none"> <li>• Use the laws of exponents to simplify expressions.</li> <li>• Add, subtract, multiply, and divide polynomials.</li> </ul>	3	4
VI. Factoring <ul style="list-style-type: none"> <li>• Factor expressions by finding the greatest common factor or by grouping.</li> <li>• Factor the difference of squares and the sum/difference of cubes.</li> <li>• Factor trinomials using a variety of methods.</li> <li>• Solve equations by factoring.</li> <li>• Solve application problems by factoring.</li> </ul>	5	4

Topic / Objectives	Lecture Hours	Lab Hours
VII. Rational Expressions and Functions <ul style="list-style-type: none"> <li>• Write rational expressions in lowest terms.</li> <li>• Multiply or divide rational expressions.</li> <li>• Add or subtract rational expressions with different denominators.</li> <li>• Simplify complex fractions.</li> <li>• Solve rational equations.</li> <li>• Solve problems involving proportions, uniform motion, and work rates.</li> </ul>	5	4
VIII. Roots, Radicals, and Root Functions <ul style="list-style-type: none"> <li>• Simplify expressions involving radicals and rational exponents.</li> <li>• Simplify products and quotients of radicals with the same index.</li> <li>• Simplify radical expressions involving addition and subtraction.</li> <li>• Multiply binomials with radical expressions.</li> <li>• Rationalize denominators involving radicals.</li> </ul>	4	4
IX. Quadratic Equations <ul style="list-style-type: none"> <li>• Solve quadratic equations by factoring or the square root method.</li> <li>• Solve quadratic equations by completing the square or using the quadratic formula.</li> </ul>	2	2
<b>Total Contact Hours</b>	<b>30</b>	<b>30</b>

**Homework:** Homework assignments are to be completed each day. The homework component of MML includes helpful features such as example problems, videos, guided solutions, and corresponding textbook pages.

**Quizzes:** Open book/note quizzes are to be completed each week during lab time. Students are allowed 60 minutes to complete a quiz. A student will not be allowed to take a quiz unless he/she has completed the prerequisite homework.

**Tests:** Students will take four tests and a comprehensive Final Exam. No notes or formulas are allowed on these tests. No makeup tests will be given. The final exam grade will be used in place of a test grade missed if the excused absence is documented.

**Grade Computation:**

4 Tests	= 400 points
Quiz Average	= 150 points
HW Average	= 150 points
<u>Final Exam</u>	= 300 points
Total Points Possible	= 1000 points

**Grade Scale:**

A = 900 – 1000 points; B = 800 – 899 points; C = 700 – 799 points;  
 D = 600 – 699 points; F = below 600 points