

Preparation for College Math II

MATH002

Fall 2015



This is a continuation of MATH001 for students who need to complete additional modules. This is a computer-based learning course designed to provide the fundamental concepts of arithmetic and algebra and examine some application of these concepts, i.e. word problems. Students are required to complete a minimum of 5 modules, but are encouraged to complete as many of the 15 modules as possible. Students who begin at module 12 or higher are required to finish through module 15. The modules cover whole numbers, signed numbers, fractions, decimals, ratios and proportions, percentages, descriptive statistics, algebraic expressions, linear equations and inequalities, graphing lines and inequalities, systems of equations, exponents, polynomials, factoring, rational expressions, quadratic equations, and related applications. Credits earned in this course cannot be applied towards graduation. Prerequisite: C- or higher in Preparation for College Math I (MATH001) or Fundamentals of Math (MATH010) or waiver by placement testing results or departmental approval.

Modules 6-10

COURSE OUTCOMES	OUTCOMES ACTIVITIES
At the end of this course, students will be able to	
Apply the rules of signed numbers, the order of operations agreement, and the rules for simplifying algebraic expressions in order to have the basic skills necessary for successful completion of the other topics in this course and related topics in other courses.	<ol style="list-style-type: none">1. Add, subtract, multiply and divide signed rational numbers. (W,R,CT,QS)2. Simplify numeric expressions according to the order of operations. (emphasis on integers) (W,R,CT,QS)3. Evaluate variable expressions. (W,R,CT,QS)4. Simplify algebraic expressions using the distributive law. (W,R,CT,QS)5. Combine like terms. (W,R,CT,QS)
Solve first degree equations and inequalities in one variable in order to solve problems that can be modeled by these types of relationships.	<ol style="list-style-type: none">1. Determine whether a given number is a solution of an equation/inequality. (W,R,CT,QS)2. Solve equations/inequalities of the form $ax = b$, $x + a = b$, $ax + b = c$, $ax + b = cx + d$. (W,R,CT,QS)3. Solve equations/inequalities containing fractions and parentheses. (W,R,CT,QS)4. Solve literal equations. (W,R,CT,QS)5. Solve proportions. (W,R,CT,QS)6. Translate and solve number problems, percent problems, ratio and proportion problems. (W,R,CT,QS)
Plot points and graph linear equations and inequalities on the Cartesian coordinate system in order to use these skills to solve related problems in this and related courses.	<ol style="list-style-type: none">1. Plot points and find the coordinates of a given point. (W,R,CT,QS)2. Graph an equation/inequality by plotting points, by finding the x-, and y-intercepts, and by using the slope-intercept method. (W,R,CT,QS)3. Graph an equation/inequality of the form $y = mx + b$, $Ax + By = C$, $y = b$, $x = a$. (W,R,CT,QS)

Determine an equation of a given line in order to solve application problems in this and related courses.	<ol style="list-style-type: none"> 1. Find the slope of a line given two points or given an equation of the line. (W,R,CT,QS) 2. Write an equation of a line given a point and the slope, two points, or information about parallel and perpendicular lines. (W,R,CT,QS) 3. Determine when two lines are parallel, perpendicular or neither.(W,R,CT,QS)
Solve systems of linear equations in order to solve applications problems in this and related courses.	<ol style="list-style-type: none"> 1. Solve a system of linear equations in two variables by graphing, the substitution method, and the addition method. (W,R,CT,QS) 2. Determine if a system of linear equations is inconsistent or dependent. (CT,QS,W,R) 3. OPTIONAL: Solve a system of linear equations using Cramer's Rule. (W,R,CT,QS) 4. Solve mixture, current, distance, and number word problems. (W,R,CT,QS)

**Indicate the Core Competencies that apply to the outcomes activities and assessment tools: Critical Thinking (CT); Technology Skills (TS); Oral Communications (OC); Quantitative Skills (QS); Reading (R); Writing (W).