

LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:

Upon successful completion of the course, it is expected that students will be able to:

1. Write fractions as decimals and repeating decimals as fractions.
2. Add, subtract, multiply, and divide rational numbers.
3. Evaluate powers with rational bases and integer exponents.
4. Demonstrate the order of operations with rational numbers.
5. Evaluate radicals with rational radicands and distinguish between exact answers and approximate answers.
6. Solve first degree equations, in one variable, including those involving parentheses; solve formulas for a given variable when other variables are known and for a given variable; solve first degree inequalities in one variable; and solve practical problems that can be solved using a first degree equation.
7. Distinguish between monomials, binomials, trinomials, and other polynomials.
8. Apply the laws of exponents to variable expressions with integral exponents.
9. Evaluate polynomials by substitution.
10. Add, subtract, and multiply polynomials.
11. Factor polynomials by removing the largest common factor and binomials of the form $a^2x^2 - b^2y^2$ and trinomials of the form $x^2 + bx + c$ and introduce the form ax^2+bx+c .
12. Solve quadratic equations using the law of zero products.
13. Simplify, by factoring, rational expressions consisting of polynomial numerators and either monomial, binomial, or trinomial denominators.
14. Determine values for which a rational expression is undefined.
15. Add, subtract, multiply, and divide rational expressions.
16. Add and subtract rational expressions consisting of monomial and/or binomial denominators.
17. Solve simple rational equations and check solutions.
18. Graph a linear equation including the forms $x = a$ and $y = b$.
19. Given a linear equation or its graph, determine its slope and x and y intercepts.
20. Determine the equation of a line, $y = mx + b$, given its graph, its slope and a point on the line, or two points on the line.
21. Solve a system of first degree equations in two unknowns by graphing, substitution, and elimination methods.
22. Use a system of equations to solve practical problems.
23. Simplify square roots with variable radicands.
24. Add, subtract, multiply, and divide square roots with variable radicands.
25. Solve equations with one square root containing a polynomial radicand and check for extraneous solutions.
26. Solve right triangles using the sine, cosine, or tangent ratios; the Pythagorean theorem; and the angle sum property of triangles.
27. Classify triangles according to angles and sides.
28. Use the properties of triangles to determine the measure of sides and angles.
29. Determine the measure and/or congruence of angles given a transversal and two parallel lines.

METHODS:

Methods will vary with instructor but may include lectures, group activities, individual tutoring, textbook exercises, lab activities, and assignments.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR (Please check:) Yes No

METHODS OF OBTAINING PLAR:

Exam

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

Aufmann, Barker, Lockwood: Introductory Algebra, An Applied Approach. 7th Edition
Geometry/Trigonometry Math 084 Coursepack
M. Johnson. How to Solve Word Problems in Algebra

SUPPLIES / MATERIALS:

A scientific calculator is required.

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Assignments 15 – 20%

Quizzes/tests	25 – 35%
Midterm exam	10 – 15%
Final exam	35 – 40%

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

1. Operations with real numbers
2. Solving equations and inequalities
3. Polynomials and factoring
4. Rational expressions
5. Graphs and linear equations
6. Systems of linear equations
7. Radical expressions
8. Geometry and trigonometry