



MTH 098 - Introductory Algebra Course Syllabus

Course Description: Computations and applications involving fractions, decimals, percent, ratio and proportion; properties of the real number system; linear equation solving; beginning algebraic concepts; geometry. Will not count toward any degree requirement including elective credit. May be required of students with a marginal background in mathematics.

Course Outline:

Approximate Time Spent:

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| <ul style="list-style-type: none">• Prime factorization and LCMs• Operations on common fractions• Operations on decimals• Percent conversions• Exponents and order of operations• Geometry• Evaluating and translating expressions• Sets of numbers, order, absolute value• Adding signed numbers• Subtracting signed numbers• Multiplication of signed numbers• Division of signed numbers | 25% |
| <ul style="list-style-type: none">• Properties of real numbers, factoring, combining like terms• Removing parentheses, simplifying, order of operations• Addition principle of equation solving• Multiplication principle of equation solving• General equation solving• Evaluating formulas, and solving formulas for a specified variable• Percent applications• Other applications• Solving inequalities | 30% |
| <ul style="list-style-type: none">• Graphs and applications of linear equations• More with graphing and intercepts• Slope and applications• Graphing using the slope and y-intercept | 15% |
| <ul style="list-style-type: none">• Exponent properties• Polynomials and terminology• Addition and subtraction of polynomials• Multiplication of polynomials• FOIL and squaring binomials | 15% |
| <ul style="list-style-type: none">• Factoring out common factors, factoring by grouping• Factoring $x^2 + bx + c$• Factoring $ax^2 + bx + c$, $a \neq 1$• Factoring differences of squares• General strategies for factoring• Solving quadratic equations by factoring (optional)• Applications of quadratic equations (optional) | 15% |

Student Learning Outcomes (SLO): At the end of MTH 098, a student who has studied and learned the material should be able to:

1. Perform operations without a calculator on integers, fractions, and decimals.
2. Solve problems involving geometric formulas for perimeter, and area.
3. Use order of operations to evaluate expressions.
4. Perform percent conversions and calculations, and solve percent applications.
5. Recognize, name, and apply properties of real numbers.
6. Simplify expressions by removing parentheses and combining like terms.
7. Solve linear equations and inequalities.
8. Solve applications involving linear equations.
9. Understand and evaluate variable expressions.
10. Use the rectangular coordinate system to investigate linear functions and graphs.
11. Use exponent properties and perform operations on polynomials.
12. Factor polynomials
13. Organize and communicate in proper mathematical form all of the steps involved in the topics above.
14. Create and use note cards, study pages, mind maps, self-quizzes, and other study techniques.