ALGEBRA 1 Syllabus 2016-2017

INSTRUCTOR	Don Aldrich	**Days/Period**:	9:33-10:13 Mon - Fri
PREREQUISITE	Completion of 8th grade	**Duration**:	Semester 1 and 2
TEXTBOOK	Holt/McDougall/Larson ALGEBRA 1 copyright 2011		
CONTACT INFO.	Schedule for office and classroom: 7:30 – 4:30 Mon –Thur. 7:30 – 3:00 Fri. or by appointment, Instructor: Don Aldrich Telephone: (269) 339 – 3362(H) Please do not call my home after 10:00 p.m. 269-965-1278 Ext 1029 Classroom, daldrich@battlecreekacademy.com		

PURPOSE OF COURSE: To teach of Jesus through basic mathematical concepts and thought process. To prepare students for Geometry and higher level of skills

CONTENT DESCRIPTION: This course is a brief review of mathematical concepts and formulas. Basic properties of real numbers, equations and applications are studied along with graphing, relations and functions, systems of equations, inequalities, factoring, rational expressions, exponents, radicals and quadratic equations are all explored.

REQUIRED TOOLS FOR SUCCESS: Text, ruler, graph paper that is 4 squares per inch, basic calculator (use allowed at teacher discretion during class), pencils, erasers, composition book, and notebook paper.

EXPECTATIONS OF STUDENTS:

1. Be on-time for class. Attendance is of the utmost importance. If you are not in the classroom then there is no learning. You are expected to be in your seat with materials ready when the bell rings.
2. Return Assignments Timely. Homework, in-class assignments, projects, or any other means of you communicating your understanding of the topic is expected to be turned in at the specified time. Allowance for late work is at the discretion of the instructor. Be prudent in managing and organizing your time.
3. Attempt All Assignments. Your input to each area of discovery and study is of vital importance. **ALWAYS** try to accomplish something towards the final objective. This will enhance your experience and give life-long skills.
4. Complete All Assignments. Completeness gives a sense of well-being and accomplishment. Do **YOUR BEST** in all. Try **EVERYTHING**. Understanding takes time, effort, and willingness. Your best and complete attempt will make an impact on the outcome. **NEVER** give up!! If at any time you have questions and you have exhausted all possibilities of answering, feel free to come by my office during the hours listed or send an e-mail. We will find a way to gain understanding. This is a cooperative venture and the end result is up to you.

COURSE FOCUS

AI.1 Identify SDA Christian principles and values in correlation with mathematics.

AI.1.1 Recognize God as Creator and Sustainer of an ordered universe.

AI.1.2 Value God's inspired writings and created works as a revelation of His precision, accuracy, and exactness.

AI.1.3 Develop accountability as expressed in God's word and laws.

AI.1.4 Employ Christian principles as a basis for learning and growth.

AI.1.5 Broaden intellectual abilities through the study of mathematics.

AI.1.6 Make biblically-based choices when dealing with mathematical data.

AI.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES

AI.2 Develop abilities in mathematics.

AI.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability).

AI.2.2 Utilize the problem-solving process (explore, plan, solve, verify).

AI.2.3 Develop higher thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize).

AI.3 Be able to apply math knowledge and skills to a variety of purposes.

AI.3.1 Use a variety of strategies in the problem-solving process (patterns, tables, diagrams, etc.).

AI.3.2 Conduct research (locate, observe/gather, analyze, conclude).

AI.3.3 Perform calculations with and without technology in life situations.

AI.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT

AI.4 Be able to understand concepts involving real numbers.

AI.4.1 Simplify expressions using the order of operations, including properties of exponents, square roots, and absolute value.

AI.4.2 Identify numbers and relationships among numbers (properties, equations, inequalities, ratios, proportions, unit analysis, etc.).

AI.5 Be able to represent mathematical situations using algebraic symbols and models.

AI.5.1 Use and evaluate expressions involving variables.

AI.5.2 Write and solve equations, systems of equations, and inequalities from written and oral expression, recognizing equivalent forms.

AI.5.3 Identify, graph, solve, and interpret linear and quadratic functions, including the concept of variation.

AI.5.4 Apply basic concepts of statistics and probability (mean, median, mode, range).

AI.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.

AI.6.1 Calculate measurable attributes of figures (degrees of angles, lengths, perimeter, area, volume).

AI.6.2 Demonstrate mathematical proficiency using technology when appropriate.

AI.6.3 Use and manipulate given formulas to solve a variety of problems (slope, distance, area, volume, perimeter, midpoint, etc.)

AI.6.4 Perform operations involving polynomials.

AI.6.5 Solve consumer-related problems (profit, loss, sales tax, discount, interest, etc.)

AI.7 Be able to analyze results and draw appropriate conclusions.

AI.7.1 Find and interpret information from graphs, charts, and numerical data.

AI.7.2 Predict patterns and generalize trends.

AI.7.3 Judge meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology

This is a tentative syllabus and is subject to change as the progress of the student(s) allows or as time permits. Thank you for your understanding.

ASSESSMENT AND GRADING

EACH NINE WEEKS:	45%	Points accrued divided by Points Possible
SEMESTER EXAM:	10%	Adjusted to each Nine week grading period
GRADING SCALE:	As outlined in the Handbook	

Please note there is not a breakdown for quizzes, tests, homework, in-class work, projects or any other means of producing understanding. I believe that everything we do for this class has an impact on your understanding. Therefore, everything has the same level of importance.

SEQUENCE FOR THE YEAR

IMPORTANT: The textbook is a resource; it does not determine the content of the course though it may influence the sequence of the topics.

QUARTER 1 OUTLINE

Review of basic operations and relationship to Algebra are covered as well as order of operations and the applications, expressions and evaluation, writing equations, representing functions with rules, tables, plans for solving, and graphs. Properties of real numbers are explored as well as integers, rational numbers, and other sets of numbers and how to use the basic math processes with each. An introduction to EXACT square roots is utilized prior to solving equations from one step to multiple steps and finding different techniques for solving problems.

QUARTER 2 OUTLINE

Utilizing graphs of lines and how to use different techniques for graphing highlight this quarter. Other aspects of Algebra covered include Linear functions, modeling direct variation, writing linear equations in several formats, fit lines to data, predicting a model, solving inequalities, line graphs for inequalities, multi-step inequalities, greater than or less than inequalities, absolute value inequalities, and graphing in two variables complete the semester.

QUARTER 3 OUTLINE

Taking the foundation from graphing lines and inequalities we continue with solving systems of equations using three methods. These are graphing, substitution, and elimination. Also explored is using the order of operations to choose the proper solving technique. We expand to exponents, exponential functions, scientific notation, exponential growth and decay models and their graphs. Completing the quarter will be introduction to polynomials and factoring utilizing many techniques. Factoring will include expressions, binomials, trinomials, grouping, quadratic formula, and completing the square.

QUARTER 4 OUTLINE

Utilizing the factoring techniques we will explore quadratic equations and their graphs as well as solving using any of the techniques for factoring. Simplifying and solving expressions and equations with square roots, the Pythagorean Theorem, the converse, distance and midpoint formulas, rational and radical expressions and equations, and a connection to Geometry are introduced and explored.