ALGEBRA II Syllabus 2016-2017

INSTRUCTOR	Don Aldrich	Days/Period:	8:50-9:30 Mon - Fri
PREREQUISITE	Algebra I and Geometry or at the discretion of the instructor	Duration:	Semester 1 and 2
TEXTBOOK	Holt/McDougall/Larson ALGEBRA 2 copyright 2012		
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 Algebra 2 utilizing higher level skills and thought processes as well as show connections to life and its complexities.

CONTENT DESCRIPTION: A course in high level mathematics covering real numbers, equations and inequalities, graphing, polynomials, factoring, analytic geometry, exponential and logarithmic functions, sequences and series, triangle trigonometry, trigonometric graphs, identities and applications, matrices and determinants are most of the topics covered.

REQUIRED TOOLS FOR SUCCESS: Text, Composition book, calculator (Ti-83 is suggested but not necessary), pencils, erasers, graph paper (4 squares per inch is preferable), 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 E**VERYTHING**. 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

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

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

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

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

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

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

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

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

COURSE ABILITIES

AII.2 Develop abilities in mathematics.

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

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

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

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

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

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

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

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

COURSE CONTENT

AII.4 Be able to understand concepts involving complex numbers.

AII.4.1 Simplify expressions using the order of operations, including radicals and absolute value.

AII.4.2 Identify numbers and relationships among numbers (properties, equations, inequalities, etc.).

AII.4.3 Determine trigonometric values using the unit circle.

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

AII.5.1 Use and evaluate expressions involving variables.

AII.5.2 Write and solve higher order equations and inequalities from written and oral expression, recognizing equivalent forms.

AII.5.3 Identify, graph, and interpret various functions (quadratic, inverse, trigonometric, conic, logarithmic, exponential, etc.).

AII.5.4 Present data using statistics and probability (linear regressions, counting techniques)

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

AII.6.1 Solve systems of equations and inequalities using graphs, algebraic methods, and matrices.

AII.6.2 Solve consumer-related problems involving linear programming.

AII.6.3 Solve exponential and logarithmic equations.

AII.6.4 Perform operations involving polynomials and rational expressions.

AII.6.5 Demonstrate mathematical proficiency using a graphing utility.

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

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

AII.7.2 Predict patterns and generalize trends.

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

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 Algebra 1 and Geometric concepts and their respective application in Algebra 2. Quadratic functions and factoring by writing, graphing, solving, and performing several operations using a variety of methods. Utilization of square roots and complex numbers and solving as well as simplifying these concepts. Graphing polynomial functions, performing operations with polynomial, solving polynomial equations, and finding zeros of equations and expressions. Using rational exponents, graphing radical functions, solving radical equations, and performing function operations and finding their inverse complete the quarter.

QUARTER 2 OUTLINE

Graphing exponential and logarithmic functions, solving logarithmic and exponential equations, writing and applying exponential and power functions begin the quarter. Also explored this quarter are graphing rational functions, performing operations with rational expressions, solving rational expressions, and describing and comparing characteristics of functions.

QUARTER 3 OUTLINE

Second semester starts with review from first semester and we start with combinations and their use, constructing binomial distribution, normal distribution, samples and surveys as well as analyzing sequence by finding sums of series and use of recursive rules. We finish the quarter with an introduction to conic sections by writing equations, graphing equations, and solving quadratic systems.

QUARTER 4 OUTLINE

Last quarter starts with completion of conic sections, using trigonometric functions, their inverses, and the graphs of each. Also introduced is the law of sines and cosines and its applications as well as the use of trig functions, solving trig equations, and applications of trig formulas.

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