Geometry Syllabus 2016 - 2017

INSTRUCTOR	Don Aldrich	Days/Period:	12:56 - 1:36 Mon - Fri
PREREQUISITE	Algebra I	Duration:	Semester 1 and 2
TEXTBOOK	Holt, McDougal, Larson Geometry 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 the study of mathematics as designed by God and to prepare the student for the next level of Math (Algebra II).

CONTENT DESCRIPTION: A two semester course designed to introduce the student to logical reasoning. Points, lines, planes, angles, triangles, polygons, circles, area, volume and other areas are studied.

REQUIRED TOOLS FOR SUCCESS: Textbook, Composition book, Compass, Protractor, Ruler (12"), pencils, erasers, calculator (must have trig functions), graph paper (4 squares per inch suggested), notebook paper.

EXPECTATIONS OF STUDENTS: {rules/procedures for 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 will be assigned as necessary with regard to time frame and topic covered. You must turn in your work at the beginning of the next class or it will be considered late and not accepted. If you arrive tardy to class your homework will be accepted at the teachers' discretion. (This depends on reason for tardy) Please show your work as defined in class as this helps the learning experience. Homework is designed to enhance the topic covered in class and to provide the instructor with a return of the knowledge imparted. Projects have a great impact on your learning experience and are designed to broaden your knowledge base. Therefore your best attempt to accomplish each task is expected.

3. Attempt All Assignments. Classroom decorum and preparedness is a sign of your intent of seriousness for any class. The major areas of concern are as follows: are you on time, do you have your materials, have you prepared yourself for today's lesson, is your homework done, do you have questions, have you put forth your **BEST** effort, are you staying on task, are you using your time wisely, do you contribute to a learning atmosphere in the class, and are you able to control yourself without someone else's intervention? Please be responsible and contributing students.

4. Complete All Assignments. 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:

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

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

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

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

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

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

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

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

COURSE ABILITIES:

GM.2 Develop abilities in mathematics.

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

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

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

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

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

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

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

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

COURSE CONTENT

GM.4 Be able to understand terms and symbols of geometry.

GM.4.1 Demonstrate understanding of undefined terms (point, line, plane, and space).

GM.4.2 Interpret properties and relationships among figures using inductive and deductive reasoning.

GM.4.3 Understand how basic mathematical systems are built (observations, hypotheses, theorems, laws, etc.).

GM.4.4 Classify and characterize figures and objects (angles, polygons, polyhedra, circles, and spheres).

GM.4.5 Recognize various types of symmetry and transformations.

GM.5 Be able to represent geometric properties and relationships.

GM.5.1 Specify spatial relationships using coordinate geometry.

GM.5.2 Identify measurable attributes of figures and objects.

GM.5.3 Verify similarity and congruence of geometric figures.

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

GM.6.1 Apply coordinate geometry and algebraic formulas to verify characteristics of geometric figures.

GM.6.2 Select and use an appropriate direct or indirect method of measurement in a given situation.

GM.6.3 Construct geometric figures.

GM.6.4 Use trigonometric equations to solve triangles and find areas.

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

GM.7.1 Investigate, apply, and prove properties and theorems.

GM.7.2 Find and interpret information from graphs, charts, and numerical data.

GM.7.3 Predict patterns and generalize trends.

GM.7.4 Make conjectures regarding 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
Expect to cover Chapters 1 through 3.
Give an introduction to terminology, use of algebraic concept in Geometry, and measurement in chapter 1. Chapter 2 focuses on reasoning using inductive and deductive as well as counterexample. Also will use conditional statements as well as a hypothesis and conclusion to show a cross connection to Science. Will introduce Theorems, Postulates, and Corollary as well as two column proofs. Chapter 3 will identify angle relationships as well as parallel and perpendicular lines and the algebraic concepts that apply in Geometry for graphs and equations of lines.

QUARTER 2
Expect to cover Chapters 4 through 6.
Chapter 4 focuses on congruence as it applies to triangles. Also uses corresponding parts and increases knowledge for proofs by using flow proofs. Classify triangles and relates congruence and transformation. Chapter 5 uses relationships within triangles and further develops skills for proofs by use of coordinate proof. Justification of proofs by use of midsegment, bisectors, medians, and other triangular concepts is finalized. Indirect proofs complete the chapter. Chapter 6 focuses on relationships by use of ratio and proportion as they apply to similarity. Geometric mean, similar polygons, indirect measurement, and proportionality are utilized to finalize the chapter with dilations.

QUARTER 3
Expect to cover Chapters 7 through 9.
Chapter 7 focuses on right triangles, special triangles, and indirect measurement. The connection to Algebra concepts is again utilized with the Pythagorean Theorem and then Trigonometric functions are introduced for use in solving as well as the inverse functions. Chapter focuses on special quadrilaterals and measurement of angles. Classification and properties of each quadrilateral is given in detail so the student recognizes similarities as well as differences. Venn diagrams are used. Chapter 9 focuses on transformations. The use of image, preimage, isometry, reflection, rotations, dilations, and compositions of transformations are introduced. Matrix and vectors are also introduced.

QUARTER 4
Expect to cover Chapters 10 through 12.
Chapter 10 focuses on Circles and all the properties. Students will be using tangents, chords, secants and their relationships to solve problems. Again Algebra concepts with a Geometric approach are utilized. Chapter finalizes with writing and graphing equations of circles. Chapter 11 deals with the measurement of plane figures. Students will justify formulas for area, perimeter, circumference, and composite figures. Students will also find arc lengths and areas of sectors. Chapter 12 focuses on identifying, describing, and measuring solids. Cross sections, Euler's Theorem, and sketching are of importance. Other solids utilized are prisms, cylinders, pyramids, cones, and spheres. Similarity is again researched.

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.