MUSIC AND THEATRICAL ARTS

Required Music: This course gives students a perspective on music and its history. Students study the lives of both classical and contemporary composers. Emphasis is placed on musical terms and definitions, the orchestra, rudiments, and hymnology.

Choir: Student vocalists learn singing fundamentals including: posture, breathing, warm-ups, tone quality, diction, rehearsal discipline and procedures. Music literacy is developed through a variety of choral literature, including Christian and secular classics, contemporary, jazz, and gospel, including multi-language selections. Required performances include select chapels, winter and spring concerts, and other engagements as scheduled. The goal is for students to become better musicians, vocalists, and listeners with a broader appreciation for vocal arts and an expanding base of performance repertoire and experience.

Instrumental Music: Students in grades 2-12 are joined together based on ability for an ensemble. The students play for selected chapels, and winter and spring concerts. Individual instruction may be required for participation.

Drama: This class will introduce as well as discover student’s acting and singing abilities, through various skits and exercises. A major school production is performed in the springtime.
The School

Our Savior New American School was opened in 1992 by Pastor Ronald Stelzer and Administrator, Dolores Reade.

The school is registered with New York State Department of Education and is a member of Lutheran Schools Association and Association of Christian Schools International.

OSNAS attracts a diverse student body of various races, denominations, and international students.

Our Mission:

Glorify God by helping students fulfill their potential in Heart, Mind, Body and Spirit in a nurturing Christ-centered environment.

Graduation Requirements

28 credits and 30 hours of Service are required for graduation.

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<th>Subject</th>
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<td>Bible</td>
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<td>Logic</td>
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Spanish

Elementary Level – Grades 1-5: Introduction to Spanish. Are to give a variety of vocabulary and life-like situations, (school, store, airport) in which students are familiar.

Spanish 1: Students learn to speak, read, and write Spanish in a variety of situations. They will also learn about daily life, customs and traditions.

Spanish 2 & 3: The primary goal of advanced Spanish is to help the student develop proficiency in four basic skills: listening, speaking, reading and writing.

Spanish 4: Students have the required basic knowledge of the language and proficiency in listening, comprehension, speaking, reading and writing. The course will emphasize oral skills as well as composition and grammar.

Health

Grades 7 & 8: This course presents a foundational discussion of Total Health to include how your body functions, how your soul (your mind, your will, and your emotions) responds, how you relate to others, and how you communicate with God.

High School Health: The purpose of this class is to present the Bible as the foundation for a healthy lifestyle. This class will deal with the integration of the physical, mental, social, and spiritual dimensions of life with the Total Health: Choices For a Winning Lifestyle curriculum by Susan Boe.

Honors Human Anatomy: This course uses a college level curriculum for a comprehensive look at the human body. Essentials of Human Anatomy & Physiology, The Princeton Review workbook and e guides Human Body supplement websites create the curriculum for cooperative learning of the normal structure and function of the human body. The course will study the body systems: The integumentary system, the skeletal system, the muscular system, the nervous system, the endocrine system, the circulatory system, the lymphatic system, the digestive system, the respiratory system, the urinary system, and the reproductive system.
**Grade 12 Advanced Placement American Government:** A College Board recommended curriculum is used in this class of very motivated students. The in depth study of government and politics in the U.S. begins with a comprehensive study of the constitutional underpinnings that followed the Articles of Confederation. Original source material from the Federalist papers provide great insight into the thinking of the founding father. The study of civil liberties, civil rights, political culture and socialization as well as citizen participation at all levels is examined. The importance of Christians in leadership roles is continually stressed by examination of our Biblical principles and their application in government. The students are prepared with the well respected college level textbook, American Government as well as test preparatory material. The rigorous course demands a minimum of one hour of study per day and includes a summer assignment based on the Constitution of the United States. Pre-requisite: A minimum grade of 90 in US History AP, test scores and teacher’s recommendation. Students must take the Advanced Placement tests in May for a fee.

**Grade 11 Comparative World Views:** Presents the Biblical worldview in contrast to contemporary philosophies: Secular Humanism, Communism, and New Age. Students learn how these worldviews influence ten basic disciplines of study: Theology, Biology, Philosophy, Psychology, Ethics, Sociology, History, Economics, Politics and Law. Required for graduation.

**American Experience Elective:** Provides a comprehensive survey of United States history based on topics relating to social history. Students will gain in-depth knowledge in the areas of African American history, Women’s history, Native American history, history of immigrants and landmark court cases. Knowledge gained from this course will better equip students for 11th grade US History and government.

**Latin**

7th & 8th Grade Latin

**Why study Latin?**

Approximately fifty percent of the vocabulary in our language comes from Latin. This means that students of Latin are not just learning Latin – they are learning to be much more proficient in their own language. It has been shown that verbal scores on standardized tests increase dramatically with the study of Latin. The study of Latin grammar helps in understanding the nature of grammar, and that carries over into English as well.

The study of Latin equips young minds to encounter unfamiliar material in a disciplined way. Latin trains the student in the essentials of scientific method: observation, comparison, and generalization.

**Bible**

Bible 7 & 8, 9-12 Boys and Girls: Students are required to take Bible in grades 7-12.

The Bible is taught as the Word of God. All curricula in addition to the Bible is selected based on the following criteria: content includes creation, God’s law and God’s plan of salvation, through Jesus Christ our Lord. Bible class is designed to apply the teaching of the Bible to every day life. The objective is to be able to use the Bible as a life guide and to draw closer to God.

**Computer**

Grades 7 & 8 Computer: Students learn basic computer and keyboarding skills using various programs such as Microsoft Word and general Internet use and safety.

Grades 9-12 Computer: This course introduces computer applications and reviews various programs such as Word, Excel, and PowerPoint. Students will also develop their typing skills and learn report formatting for school research papers.
CRIMINAL JUSTICE

Criminal Justice: This is an introductory course in the field of the justice system in our country, including a general overview of the police, courts, and correction agencies. Though all students interested in a career in this field would benefit, this course is mainly geared to a practical application that would benefit all students. Among the subjects studied: criminal and civil laws; police encounters; a basic knowledge of the court proceedings and how to safeguard your rights as a citizen; and applying your knowledge of the justice system to numerous practical applications in your life.

ENGLISH

Prerequisites for Honors and Advanced Placement in English: A minimum grade of 90 in previous class or Honors class, test scores, and teacher’s recommendation. AP Classes must take test in May for a fee.

Grade 7 English: Students study the fundamentals of the writing process, the development of the three and four-paragraph essay, the development of thesis statements, and holistic instruction to the MLA research format. Also, the writing process incorporates mastery of the fundamentals of grammar, the conventions of English, spelling, and vocabulary. In the course of study, students will write essays, and present oral presentations. Essentially, emphasis is placed on the analysis and interpretation of literature in various genres, such as poetry, short stories, and novels (fiction and non-fiction). Students will be able to identify various literary elements, formulate the five stages of a plot, and infer, predict and discuss outcomes in literary works.

Grade 11 AP United States History: An intensive United States History Course for the serious student. This course provides a historical overview of the United States through present times. The course begins with Pre-Columbian Societies and continues through the major events of the 18th and 19th century, concluding with the Post-Columbian period. Students use a well-respected college level textbook, The American Pageant and also text preparation materials. This course demands a time commitment of one hour of study or reading every day. A summer reading assignment is also required along with an analysis of that book. This course culminates in an exam designed and scored by the College board and given in May. Success on the exam results in college credit. This rigorous course is for a highly motivated and academic student. There is extensive reading and preparation for the Advanced Placement examination in May. Pre-requisite: A minimum grade of 90 in World History, test scores, and teacher’s recommendation. Students must take the Advanced Placement tests in May for a fee.

Grade 12 American Government: Examines the principles and mechanics of a constitutional republic. It underscores the responsibilities of Christian citizenship within society. Emphasis is placed on Biblical and governmental principles, the Constitution, political parties, elections, pressure groups, citizenship, the branches of government, and economics. The students are also taught to analyze governmental actions and the ramifications of political decisions. The students are exposed to the reality of what goes on behind the scenes of the political arena in order to enable them to make informed and intelligent decisions regarding the political candidates and parties they should support in elections.

Grade 12 American Government Honors: Pre-requisite for Honors (if needed) would be a minimum grade of 85 in a preceding course, test scores, and teacher’s recommendation.
Grade 9 History and Geography I: Global History and Geography I is the first part of a two year survey course that gives students the opportunity to explore recurring themes of human experience common to civilizations around the globe from ancient to contemporary times. A historical approach will be at the center of the course. The application of the themes of geography and an analysis of the cultural traits of civilizations will help students understand how people shape their world and how their world shapes them. The time frame will be from ancient civilizations through the 1500’s.

Grade 9 Geography Honors: Same content at an accelerated level. Pre-requisite: A minimum grade of 85 in 8th grade Social Studies, test scores, and teacher’s recommendation.

Grade 10 Global History and Geography II: Global History and Geography II is the second part of a two year survey course that gives students an opportunity to explore the themes of the human experience from the 1500’s to modern times. A historical approach is at the center of this course. There will be an emphasis on geography as well as an analysis of the themes of revolution, turning points, political and economic systems. Pre-requisite for Honors (if needed) would be a minimum grade of 85 in a preceding history course, test scores, and teacher’s recommendation.

Grade 11 United States History: Events in U.S. History are studied through the use and analysis of documents, images, cartoon, quantitative data and other primary sources. Major themes in U.S. History are presented in chronological order and include economic and social life.

Grade 11 United States History and Politics Honors: This in-depth study of government and politics in the U.S. begins with a comprehensive study of the constitutional underpinnings that followed the Articles of Confederation. Original source material from the Federalist Papers provide great insight into the thinking of the founding fathers. The study of civil liberties, civil rights, political culture and socialization as well as citizen participation at all levels is examined. The importance of Christians in leadership roles is continually stressed by examinations of our biblical principles and their application to government.

Grade 8 English: Students continue their study of the fundamentals of the writing process: business letter, friendly letter, the development of the four and five paragraph essay, the development of efficient thesis statements, and instruction to the MLA writing format. The writing process also incorporates mastery on the fundamentals of grammar, spelling, and vocabulary. In the course of study, students will write essays, a research paper, and construct various presentations. Additional emphasis is also placed on the analysis and interpretation of literature in various genres, such as poetry, short stories, and novels (fiction and non-fiction). Reading enhances reading comprehension, assists in the decoding of context clues and increases vocabulary. Students will be able to identify various literary elements, formulate the five stages of a plot, and infer, predict and discuss outcomes in literary works.

Grade 9 English & Writing: Emphasis is placed on the analysis and interpretation of literature in various genres, such as poetry, short stories, and novels (fiction and non-fiction). Students will review and identify various literary elements, formulate the five stages of a plot, and infer, predict, discuss, and evaluate outcomes in literary works. Students will review the fundamentals of the writing process in persuasive, analytical, and expository essay build on previous grammatical, mechanical, stylistic, research, and vocabulary skills, and be introduced to SAT vocabulary. Also, this course also introduces students to the construction of metacognitive dialectical journals. Various writing assignments include: essays, journal responses, a research paper, and various presentations.
English 9 Honors: This is a course that develops students' proficiency in reading, writing, high-level thinking, and research skills in MLA format. The fundamentals of the writing process of revising, editing, and proofreading are implemented. Cognitive skills of comparison and/or contrast, cause and effect, inference, analysis, and reflection are developed to give students a platform for interpreting literature and writing expository and analytical essays in which literature is examined contextually through a critical lens. This trains students to generate specific details to verify a generalization. Students will study SAT vocabulary words and review grammar and the conventions of English in preparation for the Writing Section of the SAT and/or ACT. Furthermore, this course introduces students to metacognitive journal writing through outside readings of literary selections. The art of persuasive writing is exhibited in a mandated MLA research paper on a literary selection in American or British or World literature. In this task, students will integrate original thoughts with derivative ideas.

Grade 10 English & Writing: This course builds on the foundation provided in the ninth-grade text and expands the student's knowledge of interpreting and analyzing literature. Continued emphasis is placed on the analysis and interpretation of literature in various genres, such as poetry, short stories, and novels (fiction and non-fiction). Students will review and identify various literary elements, formulate the five stages of a plot, and infer, predict, discuss, and evaluate outcomes in literary works. Students will review the fundamentals of the writing process in MLA format; build on previous grammar concepts and spelling, and SAT vocabulary; construct dialectical journals, argumentative, analytical, and expository writing. Various writing assignments include: essays, journal responses, research papers, and various presentations.

Grade 10 English & Writing Honors: This course encompasses the same content as English 10 at an accelerated pace with additional emphasis on themes and works incorporated.

Grade 11 American Literature & Composition: Students examine literary works and critical attention is given to the literary movements and beliefs of individuals in the periods to which they belong: Colonial-Revolutionary, Romantic, Realistic–Naturalistic, and Modern. Emphasis is placed on inferring, evaluating, and analyzing literary works. Students will review the fundamentals of the writing process; build on previous grammar concepts and spelling, and SAT vocabulary, construction of dialectical journals, argumentative, analytical, and expository writing. This course provides the student with advanced composition work outlining, writing and revising essays in MLA format. Various assignments include: essays, journal responses, research papers, and various presentations.

Advanced Placement Physics: This course covers material in a first semester Algebra-based college level physics course. We cover significant figures, unit conversions, and scientific notation reviewing kinematics in one and two dimensions, Newton's Laws of motion, circular motion, gravitation, work, conservation of energy, power, momentum, rotational motion, waves and oscillations, sounds, electrostatics, and electrical circuits. Laboratories are performed on a weekly basis as according to the AP Physics standards. Focus on assignments is developing good problem solving skills and a contractual and mathematical understanding of physical concepts.

Pre-requisite for AP Physics: Grades in Chemistry, Math and teacher recommendation.

Geology: Students study both physical and historical geology beginning with astronomy. Topics include earth structures, earth changes (weathering, erosion and sedimentation), earth movement, rock formation, fossils, earth's weather and ecology. All of these topics are approached from Creation concept and compared and studied to the secular view.

Social Studies

Grade 7 American Republic I: Provides a comprehensive survey of United States history from the age of exploration in the 1500s through the American Expansionism of Manifest Destiny in the 1850s. Students will gain a solid foundation of knowledge based on the heritage of the United States. This course contains an overview of the people and events, as well as a Christian perspective on the heritage of Americans. In addition, students will analyze primary and secondary source documents to gain a deeper understanding of each time period.

Grade 8 American Republic II: Provides a comprehensive survey of United States history from the American Civil War through current times. Students will gain a solid foundation of knowledge based on the heritage of the United States. This course contains an overview of the people and events, as well as a Christian perspective on the heritage of Americans. In addition, students will analyze primary and secondary source documents to gain a deeper understanding of each time period.
Grade 9 Earth Science: Students study astronomy, the sun, moon, stars, planets, asteroids, comets, meteors, and the exploration of space. This course discusses the perfection of God’s design in a study of the earth, including geology, meteorology, resources, and human impact on the Earth.

Grade 10 Biology: This course presents scientific information needed to live in today’s world as well as the biblical perspectives Christians must understand in order to take the proper stand. This course deals with such subjects as cellular biology, genetics, taxonomy, microbiology, botany, zoology, and human anatomy and physiology. Students study not only creationism, but also the Christian position regarding evolution, eugenics, drugs, abortion, diseases, miracles, euthanasia, hypnotism, homosexuality, ecology, self-control, physical disorders, genetic engineering, immunology, AIDS, animal rights, cancer, and numerous other topics.

Biology 10 Honors
Pre-requisite for Honors (if needed) would be a minimum grade of 85 in a preceding Science course, test scores, and teacher’s recommendation.

Grade 11 Chemistry: This course is a college preparatory course and is for math-oriented students who have had a good background in algebra and general science. The text presents chemistry as relevant and practical, but also thoroughly teaches the fundamentals. Teaching dimensional analysis to solve problems is emphasized and a full range of topics such as gases, chemical bonding, chemical kinetics, equilibrium, acids and bases, oxidation-reduction reactions, nuclear and organic chemistry is covered. Applications to Christianity are made especially in the topics of matter, the periodic table, and thermodynamics.

AP Chemistry: A comprehensive college preparatory course that students for work in the scientific community. The course includes work in the following subdivisions for chemistry: organic, quantitative, qualitative, inorganic, stoichiometry, thermodynamics, kinetic molecular theory and nuclear theory. Students are prepared for and must take the Advanced Placement exam in May for a fee.

Pre-requisite: A minimum grade of 90 or better in previous science, test scores, and teacher’s recommendation.

English 11 AP: English Language and Composition: This is a college level course that is typically offered to eleventh graders. Depending on students’ test results on the national AP examination that is administered in May of each year by the Educational Testing Service for the College Board, students may be awarded three undergraduate credits in English. This course is designed to be challenging and arduous. As a result of students’ proficiency in English Language and Composition, students may opt to enroll in the English 12 AP course: English Literature and Composition. Essentially, English Language and Composition is a high-level reading, writing, and thinking course. The multiple-choice questions typically focus on identifying rhetorical devices and structures from five passages, as well as their general function, purpose in a passage, and/or the relationships between them. In 2007, questions were added that ask about citation information in the passages. These questions focus on how citation references enhance information from the passages. This course is designed for motivated and assiduous students who have a command of grammar, the conventions of English, spelling, diction, syntax, and literary elements or figurative language in analyzing literature to increase precision in writing. The Free-Response section of the test consists of three prompts in synthesis, analysis, and argument. Students are required to write highly proficient essays that exhibit their thinking and writing skills. The synthesis essay requires that students formulate independent thoughts and derivative information from several documents to support a thesis. The analogy prompt requires that students read and analyze a passage through the application of literary elements or figurative language and rhetorical elements in the passage. Afterwards, students must explain how this information contributes to the overall purpose of the passage. The argument prompt gives a position in the form of an assertion from a documented source. Students must consider the assertion and form an argument that defends, challenges, or qualifies the assertion. Students must use supporting evidence to defend their thesis. It is a course requirement that students write a college level research essay or term paper in MLA format on a literary work in American literature. In addition to high-level reading, writing, thinking, and research skills, students will be required to develop the skill of oral presentation.
Grade 11 English & Composition — Honors: This course encompasses the same content as English 11 at an accelerated pace with additional emphasis on in-depth analysis of themes and works incorporated.

Grade 12 British Literature & Composition: This course covers authors and works of eight literary periods: Old English, Middle English, Tudor, Stuart, Neoclassical, Romantic, Victorian, and Modern. Students examine cultural and literary traditions in light of Scripture, along with an overview of English Christianity from its beginning to the present. Emphasis is placed on inferring, evaluating, and analyzing literary works through essays, journal responses, research papers, and various types of in-class presentations. Students will review the fundamentals of the writing process; build on previous grammar concepts and spelling, and SAT vocabulary; the construction of dialectical journals, as well as argumentative, analytical, and expository writing. This course also provides the student with advanced composition work in outlining, writing and revision according to MLA format requirements. In addition, emphasis is placed on preparing students for the college experience, as students prepare college portfolios and essays.

Grade 12 British Literature & Composition — Honors: This course encompasses the same content as British Literature 12 but at an accelerated pace with emphasis on in-depth analysis of themes and works incorporated.

Public Speaking: A required class for graduation, this class covers basic communication and public speaking skills. This course is intended to give purpose, practice and polish to any speaking situation.

Introduction to Accounting: Introduces the secondary student to the math needed to operate a business and successfully manage family finances. Also covers a review of the four basic math operations including a full review of fractions. Topics also included are: the six basics of accounting, balance sheet, income statement, general journal, general ledger, break-even point, inventory turnover, trade credit and discount, storage inventory and volume. English and metric conversions, investments including the stock market, certificate of deposits, savings accounts, mutual funds and compound interest, taxes– including deductions from gross pay, 1040, 1040ez, 1040a, sales, property and income tax, how to balance a checkbook, loans for housing and small business.

Logic

Introductory Logic: This course covers logical, categorical statements, informal fallacies, and syllogisms. This course is a thorough introduction and serves as both a self-contained course as well as a preparatory course for more advanced studies.

Science

Grade 7 Life Science: Students study science and its relationship to the Word of God, examining the attributes of life, classification, cells, and Biblical Creation. This course deals with such subjects as the life processes of organisms, genetics, and biological evolution. Life Science presents concepts in microbiology, plant biology, and zoology, including reproduction. Students look at ecosystems, interrelationships among organisms, and a Biblical perspective of man’s stewardship of the earth. The course concludes with a study of the human body and its basic structure and function.

Grade 8 Physical Science: This course of the physical sciences consists of introductory chemistry and introductory physics. Students are introduced to the fundamental concepts of the scientific method, the metric system, and the physical sciences in preparation for upper level laboratory courses such as biology, chemistry, and physics.
Pre-Calculus: Interweaves topics from algebra, geometry, trigonometry, discrete mathematics, and mathematical analysis to form a fully integrated course of study. Specific topics covered in this course include: graphing high degree equations, functions, rational root theorem, trigonometric identities, inverse trigonometric functions, graphs of sinusoids, rectangular and polar representation of complex numbers, De Moivre’s theorem, matrices and determinants, and the rational roots theorem. Additionally, a rigorous treatment of Euclidean geometry is presented. Word problems are developed through the problem sets and become progressively more elaborate and difficult.

Advanced Placement Calculus AB: The AP Calculus AB course explores one semester of the key concepts, methods, and applications of single-variable Calculus. Students will be taught more than basic knowledge of Calculus, they will learn to synthesize and evaluate the two major branches of Calculus: Derivatives and Integrals. This includes the concepts of functions, graphs, limits, continuity, derivatives, applications of derivatives, integrals, applications of integration, and the Fundamental Theorem of Calculus. Students will become familiar with concepts, results, and problems expressed in multiple ways including graphically, numerically, analytically, and verbally. They will use technology to help solve problems, experiment, interpret results, and support their conclusions. Numerous applications to physics, chemistry, engineering, and business are included. Students are required to take the Advanced Placement Examination in May. This course is designed for the serious math student.

Pre-requisite: A minimum grade of 90 in Pre-calculus, test scores, and teacher’s recommendation

*If applicable classes will be taught on two levels (Honors & Standard)

Pre-requisite for Honors and AP would be a minimum grade of 90 in a preceding course, test scores, and teacher’s recommendation.

Grade 12AP English Literature & Composition: This is a college level course that is typically offered to twelfth graders. Depending on students’ test results on the national AP examination that is administered in May of each year by the Educational Testing Service for the College Board, students may be awarded three undergraduate credits in English. This course is designed to be challenging and arduous. As a result of students’ experiences in English Literature and Composition, students often perform well in undergraduate English courses. Essentially, this course is designed for motivated and assiduous students who have a command of grammar, the conventions of English, spelling, diction, syntax, and literary elements or figurative language in analyzing literature to increase precision in writing. Students will be mandated to interpret dominant literary genres, themes, and motifs. Students will be trained in strategies for success to answer the multiple-choice questions, the prose passage essay, the poetry essay, and the free-response essay. The multiple-choice questions assess students’ understanding of the meaning of selections, their ability to draw inferences and perceive implications, and the development of a writer’s ideas. Questions are factual, technical, analytical, and inferential. The prose passage essay, the poetry essay, and the free-response essay are direct reflections of students’ fluency in reading, interpreting, and analyzing literature through literary elements or figurative language. The free-response essay is based on a provocative question that is applicable to a broad range of literary texts. The College Board wants to assess students’ abilities to discuss a classic piece of prose literature in a particular context, and to assess students’ high-level, independent thinking skills and their proficiency in writing. Students’ illustrations should be cogent and insightful, rather than obvious or superficial. For a high score, students must bring ideas that are specific and impressively relevant to evaluators. It is a course requirement that students write a college level research essay or term paper in MLA format on a literary work in English literature. In addition to high-level reading, writing, thinking, and research skills, students will be required to develop the skill of oral presentation.
Mathematics

Pre-Algebra: Pre-Algebra is the study of pre-algebra mathematics. This course bridges the gap from basic math skills to algebraic concepts. Students will be well versed in: fractions, decimals, mixed numbers, signed numbers, arithmetic operations involving all these forms of numbers, order of operations, percent, proportions, ratios, divisibility, rounding, place value, unit conversions, scientific notation, and word problems involving these pre-algebra concepts. Students are introduced to rudimentary algebra topics such as the evaluation of algebraic expressions, simplification of algebraic expressions, and the solution of linear equations with one unknown. In addition, students review the topics of areas of rectangles, triangles, parallelograms, trapezoids, volumes of cubic solids, rectangular solids, pyramids, and cones, as well as rudiments of graphing, statistics, probability, and geometric calculations.

Algebra 1: Covers topics typically treated in a first-year algebra course. Specific topics included are: classifying real numbers, understanding variables and evaluating expressions involving signed numbers, order of operations, absolute value, solving equations, graphing functions including (linear, quadratic, absolute value, cubic, square root and inequalities), scientific notation, unit conversions, solutions of equations with one unknown, finding slope and rate of change, graphing on a coordinate plane, determining equation of the line, Pythagorean theorem, various methods of factoring, direct and all operations involving polynomials, probability-including permutations and combinations, data analysis—including bar graphs, box and whisker plots, histograms, stem and leaf plots and finding the line of best fit. The TI-83 calculator is used throughout the course.

Algebra 2: Algebra 2 as a course is designed to build on algebraic and geometric concepts. It covers traditional second-year algebra course material along with a significant number of geometric calculations and proof outlines. It develops advanced algebra skills such as systems of equations, advanced polynomials, imaginary and complex numbers, quadratics, and the study of trigonometric ratios. Additional topics include roots of quadratic equations, logarithms, exponential equations complex numbers, radicals, graphing lines and parabolas, matrices and determinants. Also covered is the quadratic formula.

Advanced Algebra: Advanced Algebra as a course serves as a bridge between Algebra 2 and Pre-Calculus with an emphasis on mathematical modeling and the concept of change in various mathematical settings. Among other topics, it provides in-depth coverage of trigonometry, logarithms, geometry, analytic geometry, and the fundamentals of algebra requisite for success in the previously mentioned areas. Topics covered include constructions, locus, exponential, radical, and logarithmic equations, complex numbers, systems of three equations, inductive and deductive reasoning, logic, geometric proofs, trigonometric functions, graphs of trigonometric functions, angles of elevation and depression, rectangular and polar coordinates, advanced word problems, non-linear systems, addition of vectors, inverse functions, radian measure, inverse function reciprocal trig functions, logarithmic functions, parabolas, complex roots, normal distribution, box and whisker plots, counting principle, trigonometric identities, binomial expansion, and DeMoivre’s theorem.

Geometry: An introduction to various topics including describing what is a point, line, and planes. Other topics include basics of logic, number lines, congruent segments, midpoint formula, angle relationships, complementary and supplementary concepts, perpendicular lines, parallel lines including ones cut by a transversal, triangle congruence, medians, Pythagorean theorem, distance formula, the exterior angle theorem, triangle inequality theorem, quadrilaterals, proportions, areas of polygons, circle relationships, surface area and volume, right triangle trigonometry, secant tangent and equations of circles, coordinate graphing and transformations and various proofs.