Academic Courses

Language Arts

English IA (Common Core)

English I A, the first of a two-semester course, uses standards-based, scaffolded instruction to equip next-generation students with skills in reading comprehension, vocabulary development, literary and media analysis, and the writing process. Students read and analyze a broad range of fiction and nonfiction, including technical and self-selected readings. The units offer both generic and thematic approaches. One unit is a novel study of The Pearl by John Steinbeck, and another unit introduces the hero's quest, which includes books from The Odyssey. Students communicate regularly with the teacher and other students through required chats and discussion threads. Students use technology to plan, draft, peer-edit, revise, and submit papers of a variety of purposes and types.

English IB (Common Core)

English I B, the second course of a two-semester series, uses standards-based, scaffolded instruction to engage next-generation students in critical thinking and reading skills. Students analyze the rhetoric of speeches and practice persuasive speech writing and delivery. A re- search unit guides students through the research process, from narrowing a topic to selecting and citing credible sources. Literary analysis units include poetry and Shakespeare's Romeo and Juliet. In addition to using the writing process to compose, edit, and revise papers for different purposes, students are expected to self-select material to read or view independently. Students participate in required chats and discussion threads to develop interpersonal communication skills.

English IIA (Common Core)

English II A, the first course of a two-semester series, is an intermediate standards-based English course that combines the study of world literature with a continued focus on composition skills. Students read, reflect, synthesize, and respond to several different types of world literature, including Antigone and House on Mango Street. Students are expected to self-select material to read or view independently. They participate in required chats and discussion threads to continue developing interpersonal communication skills. Students use technology to plan, draft, peer-edit, revise, and submit papers of a variety of purposes and types.

English IIB (Common Core)

English II B, the second course of a two-semester series, is an intermediate standards-based English course that combines the study of world literature with a continued focus on composition skills. A research unit guides students through the research process, from narrowing a topic to selecting and citing credible sources. Students read, reflect, synthesize, and respond to several different types of world literature, including Metamorphosis, poetry, and An Enemy of the People. Students are expected to self-select material to read or view independently.

English IIIA (Common Core)

English III A, the first course in a two-semester series, is a standards-based course that explores classic and contemporary American literature of increasing complexity with foundational U.S. documents, seminal works of American literature, and modern literature. The course focuses on historical as well as literary themes and ideals through reading, writing, speaking, listening, media, and technology. Students connect their lives to the texts, analyze these texts, and write clearly about them using the writing process. In addition to informational texts, short stories, speeches, and sermons, students read and analyze Nathaniel Hawthorne's The Scarlet Letter. They write short and longer expository, persuasive, reflective, and narrative papers. Students are expected to self-select material to read or view independently.

English IIIB (Common Core)

English III B, the second course in a two-semester series, is a standards-based course that explores classic and contemporary American literature of increasing complexity with foundational U.S. documents, seminal works of American literature, and modern literature. The course focuses on historical as well as literary themes and ideals through reading, writing, speaking, listening, media, and technology. A research unit guides students through the research process, from narrowing a topic to selecting and citing credible sources. Students connect their lives to the texts, analyze these texts, and write clearly about them using the writing process. In addition to poetry, short stories, speeches, and dramas, students read and analyze Mark Twain's The Adventures of Huckleberry Finn. Students are expected to self-select material to read or view independently.

English IVA (Common Core)

English IV A is the first of a two-semester standards-based course in which students read and respond to selections of British literature from various genres. The course concentrates on analyzing and interpreting poetry, short stories, novels, and nonfiction works and includes an in-depth study of Shakespeare's King Lear. Students complete presentations using a variety of technological tools for expression and organization of ideas. Students are expected to self- select material to read or view independently.

English IVB (Common Core)

English IV B is the second of a two-semester standards-based course that utilizes a thematic approach to a variety of literature from medieval, romantic, and realistic time periods. Students read and analyze a self-selected novel with a thematic focus and produce a research paper that extends their knowledge of that theme. In addition to analyzing literary qualities including symbolism and irony, students produce expository, persuasive, and creative writing of varying lengths to demonstrate mastery of the literary devices and thematic approaches studied in the course.

Mathematics

Algebra IA (Common Core)

Algebra I A, the first course in a two-semester series, begins with a review of algebraic properties, integers, exponents, and roots. Students will then build on that knowledge as they study rational numbers, solving equations, proportions, and absolute values. The course continues with graphing linear equations and slope-intercept form, before concluding with a study of inequalities. Assessments include self-check quizzes, audio tutorials, and interactive games. Prerequisite: Pre-Algebra

Algebra IB (Common Core)

Algebra I B, the second course in a two-semester series, begins with a review of integers, fractions, and order of operations. Students will then build on that knowledge as they study solving and graphing inequalities with one and two variables. The course continues to solving systems of equations using graphing, substitution, and elimination. Students will then learn about exponents, radicals, and polynomials, concluding with proportions, percents, and data representation. Assessments include self-check quizzes, audio tutorials, and interactive games. Prerequisite: Pre-algebra

Algebra IIA (Common Core)

Algebra II A, the first in a two-semester course, begins with a review of algebraic properties and equation and inequality solving. Students will study relations and functions, including linear, quadratic, and radical functions, and be able to graph these functions on the coordinate plane. Students will also identify how these major topics in algebra relate to real-world applications. Students will also explore exponential and logarithmic functions and their real-world applications. Prerequisite: Algebra I

Algebra IIB (Common Core)

Algebra II B, the second in a two-semester course, begins with the study of matrices. Students will then review solving systems of equations and inequalities. Students will apply topics in probability and statistics, polynomials, conic sections, and patterns of logic and reason- ing to real-world applications. The course provides students the opportunity to synthesize all information learned in previous studies of algebra. After successful completion of Algebra II B, students will have the necessary skills to study topics in advanced algebra and trigonometry. Prerequisite: Algebra I

Calculus A

Calculus A, the first of a two-semester course, centers on limits, differentiation, and applications of differentiation. Topics in this course apply to many problems studied in physics and engineering. Students review algebra concepts and learn fundamental calculus concepts, along with working problems for limits and derivatives. Students apply rules for finding different derivatives as well as learn the applications of the derivative. After finding the area under a curve using several

different methods, students will complete an essay assignment that applies this to a real-world problem. Students conclude the course by applying theorems and demonstrating knowledge of basic rules for anti-derivatives. After successful completion of this course, students will have a fundamental understanding of the principles of calculus. Prerequisites: Algebra I, Geometry, Algebra II, Trigonometry

Calculus B

Calculus B, the second of a two-semester course, focuses on how to calculate and graph anti- derivatives and integrals, as well as how to apply these techniques to real-world problems. In addition, students also study topics in sequences and series. Students find the derivatives of several different functions and apply these derivatives in application problems. They also calculate volume, surface area, and arc length by working with applications of the integral. Finally, students differentiate and integrate multidimensional functions. Prerequisites: Algebra I, Geometry, Algebra II, Trigonometry, Calculus A

Consumer Math (Mathematics of Finance) A

Consumer Math (Mathematics of Finance) A focuses on basic math skills used in everyday life, with the goal of developing intelligent consumers. Students study the practical applications of math using real-world situations. The course emphasizes personal finances through the study of personal earnings, including the practical knowledge and application of pay rates and other elements. Students also identify and calculate benefits, taxes, and deductions from paychecks. Students manage all components of checking and savings accounts as well as explain the concepts of saving money and setting financial goals. Students have the opportunity to analyze and graph business functions and learn about credit and life insurance. Prerequisites: Algebra I, Geometry

Consumer Math (Mathematics of Finance) B

Consumer Math (Mathematics of Finance) B is an extension of Consumer Math (Mathematics of Finance) A and continues the focus on basic math skills used in everyday life with the goal of developing intelligent consumers. The practical applications of math are studied using real-world situations. The course emphasizes personal finances through the study of personal earnings and the elements of business, credit, and life insurance. Prerequisites: Algebra I, Geometry, Consumer Math (Mathematics of Finance) A

Geometry A (Common Core)

Geometry A, the first course in a two-semester series, provides students with the logic and basic elements of geometry to solve geometry problems. The course introduces students to inductive and deductive reasoning and proofs. Students study parallel lines and the coordinate plane and explore rays, angles, and lines. Students will identify and apply the properties of triangles and study the properties of quadrilaterals and polygons. Prerequisite: Algebra I

Geometry B (Common Core)

Geometry B, the second course in a two-semester series, builds on the logic and basic elements of geometry to examine ratios, proportions, and similar figures. The course includes studies of circles, trigonometric ratios, solid geometric figures, coordinate geometry, and transformational geometry. Students will be prepared to advance to special topics like Algebra II and trigonometry. Prerequisite: Algebra I

Introduction to Probability & Statistics (Common Core)

Introduction to Probability and Statistics, a one-semester course, begins with a survey of data displays. Students will learn how to create and analyze bar graphs, line graphs, pie charts, and stem-and leaf plots. Students will build on this knowledge to analyze data by calculating measures of central tendency and variation. The course continues with an analysis of different ways to collect data, including sample surveys, experiments, and observational studies. Next, students will use data to create scatterplots and determine the linear, quadratic, or exponential model that best fits the data, and use the model to predict values that are not in the dataset. The students will then study probability, including theoretical and experimental probabilities, joint probabilities, and independent and dependent events. The course concludes with a study of risk, reliability, binomial distribution, and normal distributions. A graphing calculator TI-83 or TI-84 is a technical requirement for this course. Prerequisites: Algebra I, Geometry, Algebra II

Math Models with Applications

Math Models with Applications is a one-semester course that focuses on types of graphs, probability, and statistics. Topics covered include construction and interpretation of graphs, measures of central tendency, measures of variation, and data collection. Basics of probability and probability models are also covered. Students will participate in hands-on projects that employ the skills they learn in real world settings.

Pre-Calculus

Pre-Calculus, a one-semester course, covers a variety of topics to prepare students for more advanced calculus courses. The course starts with functions and graphs. The course also examines exponential and logarithmic functions, along with trigonometric functions and applications. Students then receive an introduction to analytic geometry and discrete algebra. The course ends with an introduction to calculus, including lessons on limits, derivatives and integrals. Prerequisites: Algebra I, Geometry, Algebra II, Trigonometry

Pre-Calculus A

Pre-Calculus A, the first in a two-semester course, covers a variety of topics to prepare students for more advanced calculus courses. The course starts with functions and graphs, including polynomial and rational functions. The course also examines exponential and logarithmic functions. In addition, students receive an introduction to analytic geometry. Prerequisites: Algebra I, Geometry, Algebra II, Trigonometry

Pre-Calculus B

Pre-Calculus B, the second in a two-semester course, covers a variety of topics to prepare students for more advanced calculus courses. The course starts with trigonometric functions and their applications. Students then receive an introduction to discrete algebra. The course ends with probability and statistics. Prerequisites: Algebra I, Geometry, Algebra II, Trigonometry

Trigonometry (Common Core)

Trigonometry, a one-semester course, prepares students for further study of mathematical topics in calculus and physics. The course begins with a review of right-triangle trigonometry. Students then study the unit circle and the graphs of basic trigonometric functions, sine, cosine, and tangent, and their inverses, as well as the relationships of these functions to chords and right triangles. In addition, students apply their study of trigonometric functions and identities to find angles of elevation and depression and solve right triangles. The course concludes with the complex number plane and the polar coordinate system. Prerequisites: Algebra I, Geometry, Algebra II

Science

Biology A

Biology A, the first course of a two-semester series, introduces students to the nature of science, the scientific method, and inquiry processes. The course explains proper lab techniques and safety procedures and methods for conducting scientific experiments and communicating their results. The course also provides students with an overview of what constitutes a living organism, followed by an in-depth study of the components that make up a healthy cell. Students will examine the structures and processes that occur in different types of cells. Other topics in this course include biochemistry, cellular activities, Mendelian and modern genetics, human heredity, evolution, and genetic engineering. Prerequisites for this course are Physical Science and Algebra I.

Biology B

Biology B, the second course of a two-semester series, provides students with an overview of classifying organisms and examining human body systems. The course introduces students to the dynamics within ecosystems and how the classification of organisms was developed. Students will analyze organisms in the six kingdoms by examining their anatomical and physiological characteristics. Students will also learn about the major systems of the human body and how bacteria and viruses cause disease. Prerequisites for this course are Physical Science and Algebra I.

Chemistry A

Chemistry A, the first course of a two-semester series, introduces students to the basic concepts of observation, the history of chemistry, and the use of reason and

the scientific method. The course also emphasizes the study of matter and energy, with a focus on identify- ing differences between states of matter and physical and chemical properties. Fundamental properties of measurement and the use of scientific notation in chemistry will be introduced early in the course and reinforced throughout the remaining units. The relation between atomic models and the periodic table will be explained, along with ways to use these concepts as tools in the study of chemistry. The remaining units of the course will focus on ions and ionic compounds, molecular compounds, acids and bases, the mole concept, chemical masses, and chemical equations. Prerequisites for this course are Algebra I, Geometry, and Biology. Students should have taken or be concurrently enrolled in Algebra II.

Chemistry B

Chemistry B, the second course of a two-semester series, focuses on chemical bonding, molecular geometry and symmetry, Lewis structures, valence shell electron pair repulsion (VSEPR) theory, and resonance structures. In addition, this course introduces thermochemistry, chemical kinetics, and electrochemistry. Calculation methodology, concepts, and definitions for pH, pOH, and buffering are also provided. Key concepts of organic chemistry, nuclear and environmental chemistry, biochemistry, and analytical chemistry are explained. The course ends with a discussion of industrial processes, energy, and careers related to chemistry. Prerequisites for this course are Algebra I, Geometry, and Biology. Students should have taken or be concurrently enrolled in Algebra II.

Earth Science A

Earth Science A, the first course of a two-semester series, is an intense study of geology as a problem-solving science. This course introduces students to how science works, the scientific method, and the nature of science. The main focus of this course is on Earth’s structure, mapping, and mineral composition, rocks and the rock cycle, plate tectonics and the plate tectonic theory, the ocean floor, volcanoes and earthquakes, mountain building and crustal deformations, Earth’s history and geologic timeline, and the forces of weathering.

Earth Science B

Earth Science B, the second course of a two-semester series, introduces the major principles and skills involved in studying meteorology and astronomy. In this course, students will study the atmosphere’s structure and composition, including the water cycle, clouds and humidity, air pressure and winds, air masses and fronts, and cyclones, thunderstorms, tornadoes, and hurricanes. They will also learn about the Earth’s night sky, tools for studying the universe, stars and galaxies, and the properties and motion of the solar system.

Environmental Science A

Environmental Science A, the first course of a two-semester series, explores the nature of science and the natural world. Students examine environmental issues and learn to make informed decisions using scientific problem solving. Specific topics include ecological interactions, matter and energy flow in ecosystems,

biodiversity, characteristics and growth of populations, evolution, succession, biogeochemical cycles, soil and land resources, agriculture, waste management, and characteristics of terrestrial biomes. Recommend Prerequisites: Biology A, Biology B

Environmental Science B

Environmental Science B, the second course of a two-semester series, continues the study of the natural world. Students explore environmental issues and make informed decisions using scientific problem solving. Specific topics include characteristics of aquatic biomes, management of water resources, use of mineral resources and effects of mining, renewable and non-renewable energy resources, atmospheric cycles, climate change, and sustainability. Recommended Prerequisites: Biology A, Biology B

Physical Science A

Physical Science A is first in a series of two courses designed to introduce students to the study of the nature of science. The course introduces students to how science works, the scientific method, and inquiry processes. The course explains methods of conducting scientific experiments and communicating the results. The course leads students to an understanding of the atomic nature of matter, the elements, and the periodic table. Students will examine the properties of matter, explore the composition and behavior of acids and bases, and ex- plain the difference between solutions and mixtures. The course concludes with a description of force, velocity, acceleration, and Newton’s laws of motion. Students should have taken or be concurrently enrolled in Algebra I.

Physical Science B

Physical Science B, the second course in a two-semester series, continues with a study of work and power. The course leads students to design simple machines based on the basic principles of physics. The course continues with a study of the generation of electricity and magnetism. The course goes on to cover the forms and properties of waves and the electromagnetic spectrum. Students will also study nuclear reactions and the composition and structure of the universe. The course concludes with an examination of the life cycle of a star and the past achievements and future goals of space exploration. Students should have taken or be concurrently enrolled in Algebra I.

Physics A

Physics A is the first course of a two-semester series that introduces students to concepts in classical and modern physics. The course discusses topics in Newtonian mechanics, gravitation, oscillatory motion, gases, fluids, and heat. This course combines the conceptual understanding of basic physics principles with problem solving. Students will learn to analyze situations, apply expressions and principles, and understand various concepts and principles. Prerequisites for this course are Algebra I, Algebra II, Geometry, Pre-Calculus, Physical Science, and Chemistry. Students should have taken or be concurrently enrolled in Calculus.

Physics B

Physics B is the second course of a two-semester series that introduces students to concepts in classical and modern physics. The course discusses the topics of static and current electricity, magnetism, electric circuits, sound, geometrical optics, waves, and modern physics. Pre- requisites for this course are Algebra I, Algebra II, Geometry, Pre-Calculus, Physical Science, and Chemistry. Students should have taken or be concurrently enrolled in Calculus.

Social Studies

American History A

American History A, the first course of a two-semester series, provides an overview of the birth of our nation and the struggle to preserve the Union during the Civil War. The course offers a closer examination of American history from Reconstruction to the beginning of the twentieth century. Major topics of study include the changes in the South after the Civil War, westward expansion, industrialization, progressivism, and the emergence of the United States as a world power.

American History B

American History B, the second course of a two-semester series, examines American history from World War I to present day. Major topics of study include the Great Depression, World Wars I and II, civil rights, the Vietnam War, and changes in the new millennium.

Economics

Economics is the study of how societies use limited resources to satisfy unlimited demand. In this one-semester course, students will explore the relationship between suppliers, consumers, governments, and multinational organizations in an effort to better understand how money affects the daily lives of people throughout the world. The course provides students with a clear understanding of how an economy functions at the macro- and micro-levels. A thorough knowledge in these areas will further offer students the tools required to under- stand how all of this can and will affect their own pocket books. Instrumental to students' understanding will be examination of these key topics: law of supply and demand, saving, borrowing and spending, the Federal Reserve System and money supply, and the role of the government in an open market economy.

U.S. Government

U.S. Government is the study of the historical backgrounds, governing principles, and institutions of the government of the United States. Students will study the roots of our Constitution and the principles of our government, such as popular sovereignty, separation of powers, and checks and balances. Individual rights, civil liberties, and the importance and responsibility of participating in a democracy will

be examined. Students will compare the U.S. system of government with other modern systems and assess the strengths and problems associated with the U.S. system.

U.S. Government A

United States Government A examines the structure and history of the U.S. government. From the United States' beginnings as a confederation to its current status as a republic, this course covers the evolution of the U.S. government from the country's inception to present day. As citizens of the United States, students will have a better understanding of how their government and their elected officials carry out the duties of government and guarantee its citizens certain fundamental rights. This course explores the foundations of government, origins of American government, the Constitution, civil liberties, the legislative and executive branches, and the relationships between federal, state, and local governments.

U.S. Government B

United States Government B, the second of a two-semester course, covers a variety of topics in the study of the American political and administrative systems. This course contains information on the American legal system, and on the political culture in the United States and public opinion. Additionally, students will learn about the powers of the executive, legislative, and judicial branches of the government, as well as political parties, interest groups, and the electoral process.

U.S. Law & Politics

U.S. Law and Politics covers a variety of topics in the study of American political and administrative systems. This course informs students about the American legal system, political culture in the United States, and public opinion. Additionally, students will learn about the powers of the executive, legislative, and judicial branches of the government, as well as political parties, interest groups, and the electoral process.

World Geography A

World Geography A is the first course in a two-semester series which examines a broad range of geographical perspectives. Students will study each region using a similar structure in order to analyze the similarities and differences between each region. Students will understand the meaning of geography through in-depth exploration of North America, Central America, South America, and Western Europe. The themes of geography will guide the exploration of each region (location, place, human-environmental interaction, movement, and region).

World Geography B

World Geography B is the second course in a two-semester series which examines a broad range of geographical perspectives. Students will study each region using a similar structure in order to analyze the similarities and differences between each region. Students will under- stand the meaning of geography through in-depth exploration of Eastern Europe and Russia, East Asia, Southeast Asia and the Pacific

Cultures, Africa, and India and the Middle East. The themes of geography will guide the exploration of each region (location, place, human- environmental interaction, movement, and region).

World History A

World History A, the first course of a two-semester series, surveys world history from prehistoric times through medieval civilizations. Students will examine the beginnings of civilization in the ancient East and Nile civilizations; Greek and Roman societies; the Americas; Muslim, African, and Asian cultures; and the European Middle Ages from socio-economic, political, and ideological perspectives. Students will identify how and why people, goods, and ideas migrated throughout global history. They will be able to explain how the geography of a region affected the cultures that arose from it. Students will identify social, political, economic, and ideological conditions of major eras in world history along with the structure of society and family in historical cultures. Students will interpret and analyze statistics and dates from maps, charts, and graphs. They will identify the scientific, technological, and artistic achievements of civilizations. Students will compare and contrast the development of religious and philosophical beliefs and traditions and how they spread, along with early political systems and their effects on modern-day governments. Students will identify the effect of industrialization and urbanization on the global economy. They will be able to articulate the relationship between historical occurrences and contemporary situations, and they will predict how contemporary issues will affect future generations.

World History B

World History B is the second course in a two-semester series that examines the European Renaissance, New Asian Empires, absolutism, Enlightenment, nationalism, Reform, both World Wars, and the Contemporary period. Students will discuss the impact of European imperial- ism and colonization, and they will recognize the connection between revolution and reform.

A+ Academic Credit Recovery Courses

Language Arts

A+ English I

A+ English I is a full semester course that contains reading sections with lessons covering common expressions, connotation and denotation, Greek and Latin words, poetry, word recognition, and story details and sequence; Usage section contains lessons about punctuation, clauses and phrases, and usage problems; Vocabulary section reviews vowel sounds and spelling.

A+ English II

A+ English II is a full semester course that includes reading sections and lessons about fact and opinion, folklore, inferences, story elements, and words in context; Usage section contains lessons about parts of speech, parts of sentences, and verbals; Vocabulary section reviews blends and silent letters.

A+ English III

A+ English III is a full semester course that encompasses reading sections and lessons that include American literature, context clues, farce and satire, and foreign terms; Usage section includes lessons about infinitives, clauses, verb tenses, and usage problems. The vocabulary section reviews consonants, syllables and pronunciation, and digraphs.

A+ English IV

A+ English IV is a full semester course that contains reading sections and lessons that include British literature, drama, etymology, genres and literature, literary devices, and propaganda and bias; Usage section reviews clauses and diagramming; Vocabulary section reviews root words and sounds of various letters.

A+ English Literature I, II, III, & IV

Literature is an essential part of every high school English course and allow students to explore universal themes, characters, and terms of literature. Each title includes four complete books and several short stories. A series of lessons with study guides accompanies the student throughout each book. Various interactive features such as plot reviews and chapter overviews enhance each student's literary learning experience.

A+ English Literature I

The Strange Case of Dr. Jekyll and Mr. Hyde by Robert Louis Stevenson
A Tale of Two Cities by Charles Dickens
The Odyssey by Homer
Romeo and Juliet by William Shakespeare

A+ English Literature II

Great Expectations by Charles Dickens
The Adventures of Huckleberry Finn by Mark Twain
Julius Caesar by William Shakespeare
The Jungle by Upton Sinclair

A+ English Literature III

The House of the Seven Gables by Nathaniel Hawthorne
The Last of the Mohicans by James Fenimore Cooper

Moby Dick by Herman Melville
The Red Badge of Courage by Stephen Crane

A+ English Literature IV

Pride and Prejudice by Jane Austen
Jane Eyre by Charlotte Brontë
Macbeth by William Shakespeare
Wuthering Heights by Emily Brontë

Mathematics

A+ PreAlgebra

A+ Pre-Algebra is a full semester transitional mathematics course for grade levels 8–9. The purpose of this course is to shift the learner from the concrete world of arithmetic into the abstract world of algebra. The first step in this process involves performing operations with integers. The student is then introduced to variables and learns how to use them in simplifying expressions, adding like terms, and solving equations and inequalities. Next, the basic rules of exponents are explored, and the coordinate plane is introduced. The concepts of fractions, ratios, proportions, and percentages are reviewed. Finally, the student is introduced to probability, statistics, and geometry.

A+ Algebra IA

A+ Algebra IA is a full semester course designed to teach students the first level of Algebra studies in lesson units. The course uses interactivity and real-world applications to engage students and to transition from a basic level to a deeper understanding of mathematical concepts, such as analyzing and explaining the process of solving equations and inequalities, developing function concepts, and graphing linear equations.

A+ Algebra IB

A+ Algebra IB is a full semester course that continues from the Algebra I: Part 1 title that covers finding solutions of linear systems of equations by graphing, eliminating variables, motion problems, using negative one as a factor, identifying the least common multiple of expressions, ratio and proportion, using inequalities to solve problems, equations with absolute values, irrational numbers, radical expressions, finding the value of a function, using vertex and axis of symmetry or the T-table, problem solving involving joint and combined variation, and identifying and evaluating the discriminant of a quadratic equation.

A+ Algebra IIA

A+ Algebra IIA includes a review of the real number system including rational numbers, rules for combining and multiplying real numbers, order of operations, connecting words and numbers through expressions, developing a plan to solve a problem, combining like terms, definition and examples of ordered pairs, grids,

quadrants, abscissa, defining linear equations, graphing equation systems, three-variable equations, matrix multiplication, transformation, point and matrix transformations, polynomial types, zero as an exponent, finding higher variables, factoring numerators, and solving complex rationals.

A+ Algebra IIB

A+ Algebra IIB continues course work from Algebra IIA and covers the review of square roots, radicals, complex pure and imaginary numbers, solving and factoring, identifying and evaluating the discriminant of a quadratic equation, rewriting equations, solving problems with number lines, graphing parabola, circle parts and formulas, hyperbola, graphing quadratic relations and inequalities, inverse functions, compound interest problems, sequences of numbers, identification of sigma, examples and definition of common ratios, finite series, and solving factorial problems.

A+ Geometry

A+ Geometry IA is a full semester course designed to teach students the first level of Geometry studies with lessons that are based on the Common Core Standards for Mathematics. All lessons have been designed to help students understand key concepts by applying real-world knowledge. Topics covered in Geometry IA begin with the basic geometric concepts of points, lines, planes, segments, and angles, then progress into increasingly complex studies that include formulas, proofs, theorems, congruence theorems, ratios and proportions, and polygons.

A+ Trigonometry

A+ Trigonometry is a full semester course that covers angles, angle terminology, reference angles, definition of sine, cosine, and tangent, definition and value of secant, cosecant, and cotangent, calculating sides of right triangles, using trig to solve real world problems, the Law of Sines and Cosines, symmetry identities, verifying trigonometric identities, sum and difference for sine, cosine, and tangent, using cofunction identities, graphing trig functions, principal values, arc length, area of circular sectors, simple harmonic motion, and frequency.

Science

A+ Earth & Space Science

A+ Earth and Space Science is a full semester comprehensive, completely integrated course for grade levels 9–12. This course provides the basic foundations of scientific measurement skills, a comprehensive look at the way the Earth and all its layers are formed, and a complete overview of the solar system and its major components. Each lesson is designed to be the foundation for the next lesson in the course so that students are provided the best reinforcement of key terminology throughout their studies. Interactive media has been included to help engage the student in the visual learning process.

A+ Biology

A+ Comprehensive Biology is a full semester course that covers a range of instructional topics including the definition of biology, atoms and elements, cell processes, comparison of DNA and RNA, identification of the kingdoms and phyla, fungal diseases, artificial reproduction, cnidaria, the worm phyla, nervous, circulatory, and respiratory systems of vertebrates, the human body support systems, digestion, skeletal support, the human spinal cord and brain, the digestive process, the importance of water in digestion and excretion, the male and female reproductive systems, gestation and childbirth, and other social issues in biology.

A+ Chemistry IA

A+ Chemistry IA is an in-depth semester-long science course that covers chemistry concepts and principles through the use of scaffolded learning, simulated activities and experiments, and checks for student understandings. This course teaches laboratory safety and techniques, basic atomic structure, sequenced learning of the periodic table, organic and inorganic compounds, chemical bonding, phase diagrams, mixtures and solutions, characteristics of solids, liquids, and gases, quantum numbers, gas laws, balancing chemical equations, stoichiometry, and various types of chemical reactions. The Pauli exclusion principle, Boyle’s and Charles’s laws, and the law of Gay-Lussac are also included in this extensive chemistry course.

A+ Chemistry IB

A+ Chemistry IB continues coursework from Chemistry IA and includes a review of the empirical and molecular formulas, the first law of thermodynamics, electromagnetic energy, classifying subatomic particles and forces, molecular geometry, identification of symbols used in writing chemical reactions, properties of solids, colligative properties, rate of diffusion, osmotic pressure, activation energy, the pH scale, spontaneous reactions, Le Chatelier's Principle, buffers, heat of reaction, and entropy.

A+ Physical Science

A+ Physical Science offers several distinctive components: an in-depth examination of the biological functions of vision and sound in relation to physical laws, the impact of scientific discoveries on technology and society, and an overview of natural hazards, including the impact of humans on the environment. The Physical Science course covers the fundamentals of chemistry, matter, energy, and various scientific fields. The lessons are designed to move the student beyond the level of basic knowledge into critical thinking and learning activities.

A+ Physics

A+ Physics is a full semester advanced level science course that includes the introduction to physics concepts, mathematics as the language of physics, scalar and vector quantities, acceleration, Newton's first law of motion, vectors, universal gravitation, mechanical advantage, thermal energy, types of waves, definition of sound, Snell's Law, atoms, magnets, the unit of charge, Ohm's Law, resistance,

combined electrical circuits, how electricity is generated, and a brief review of astronomy.

Social Studies

A+ World History A

A+ History of the World A is a full semester course that includes an overview of history, artifacts, Ice ages, Ancient Egypt, the Hanging Gardens of Babylon, the Ten Commandments, Greek civilization, Alexander the Great, philosophers, the Roman Empire, Julius Caesar's rise and fall, Roman gods, the development of commerce, the Irish and Anglo-Saxons, Vikings, the Crusades, feudalism, Henry I, Edward III, Joan of Arc, Isabella and Ferdinand, Africa, the Americas, North American civilizations, the Renaissance, the Reformation, the American Revolution, the Boston Tea Party, the First Continental Congress, the Constitution, and post-Napoleonic France.

A+ World History B

A+ History of the World B is a full semester course that covers China, Japan, isolationism, Asia, Charles Townshend, the transcontinental railroad, socialism, science in the 1800s, pioneers in medicine, Romanticism, Impressionism, the Romanov dynasty, Moscow, Catherine the Great, Latin America, Spanish colonization, Queen Victoria, the U.S. in the 1800s, German unification, the Age of Imperialism, European influence in Africa, Indian resistance to British rule, the rise of nationalism, Allied forces, World War II, League of Nations, decline of trade, increase of women's rights, the Russian revolution, Vladimir Lenin, tensions between the Soviet Union and the United States, the Berlin Wall, Vietnam, fighting in Cambodia, western Europe, NATO, the United Nations, and eastern Europe.

A+ U.S. History A

A+ U.S. History A is a full semester course that covers the story of America written in the rich history of the accomplishments of its people. America represents a multitude of cultures that collectively form a unified nation that has prospered for over two hundred years. This course is designed to bring the history of America to life by connecting the events of the past to today's world. U.S. History I is a first semester course that begins with an overview of European exploration of the New World. The birth of America and the framework of the Constitution propel the course forward through the politics, settlements, and growth of a nation. This course continues through the end of World War I in the early 1900s. Students will examine history by using the themes of culture, economics, geography, global connections, government, science and technology, and sociology and anthropology.

A+ U.S. History B

A+ U.S. History B is a second semester course that continues to show how events of the past are connected to today’s world. Beginning with post World War I, this course examines significant events such as the Great Depression, World War II, the Civil Rights Movement, and the 2008 presidential election. Students will be guided

through twentieth and twenty-first century events that have shaped our nation's society.

A+ U.S. Government

A+ Government is a comprehensive, completely integrated Social Science course for grade levels 9–12. This course is designed to explore the history of government and the development of the United States government and political systems. The Government lessons examine the authority, structure, and rights of American citizenship through the establishment of government organizations and policies. Interactive media has been included to help engage the student in the visual learning process.

A+ Economics

A+ Economics is a comprehensive, completely integrated Social Science course for grade levels 9–12. This course is designed to explore the history of economics, the development of economic theories, and the structure of American and global economies. The role of government in economics is closely examined, including topics such as the power to tax, fiscal and monetary policies, and the role of government agencies. Economic cycles and the impact of recession and inflation are discussed. Scarcity, supply and demand, and the importance of sound economic choices are taught with an emphasis on the manner in which these subjects may affect students and their economic futures. Interactive media has been included to help engage the student in the visual learning process.

Elective Courses

Health & Fitness

A+ Health

The *A+LS* Health course is designed to encourage students to take an active role in personal health. Students will learn about a variety of health topics including, health risks, types of illnesses, functions of the major systems of the body, and health career options. Objectives from elective courses are not tested on national or state achievement tests. As a result, there are no course and adaptive assessments developed for our elective course titles

A+ Lifetime Fitness

Lifetime Fitness is a lifelong pursuit. This course is designed to teach students basic concepts of lifetime physical fitness as well as give them experience with self-designed exercise programs. This course will allow students to investigate public resources that are available for understanding fitness and accessing activities from walking and hiking to kayaking.

Humanities

A+ Art Appreciation

The Art Appreciation course is a survey of painting, sculpture, architecture, and the elements of design. The history and art of past and present world cultures is introduced. The course is designed to enable students to identify, evaluate, and comprehend various forms and styles of art. The course also explores career opportunities in the various fields of art.

A+ Humanities I & II

The *A+LS* Humanities I and II lessons focus on the performing arts of music, dance, theater, opera, motion pictures, and television. Humanities, along with the social and natural sciences, represent the knowledge that humans have developed throughout history. Focusing on the philosophical, spiritual, and artistic aspects of life, Humanities explores the artistic and cultural accomplishments of individuals in the following academic areas: literature, religion, painting, sculpture, architecture, photography, art history, music, theater, film, dance, cultural studies of civilizations, philosophy, languages, ethics, and the classics of Ancient Greece and Ancient Rome.

Personal Improvement

A+ AIMS Prep Math

A+ AIMS Math is designed to help students meet the Arizona Standards in mathematics by providing them with increased individualized instruction and remediation activities.

A+ Career Essentials

The Career Essentials course prepares students to deal with the various aspects of the job search such as resume writing, job interviewing, thank you letters, and prospective job offers. Objectives from elective courses are not tested on national or state achievement tests.

A+ Personal Finance

An important aspect of every student's future is the ability to plan and implement sound and responsible financial goals. The A+LS Personal Finance course will educate students in a variety of financial and monetary subjects, including the foundations of economics, preparing a budget, understanding paychecks and tax deductions, banking, and the importance of researching the quality of goods to make consumer choices. Lessons of similar topics have been grouped into units to provide smooth transitions from one lesson to the next.

Social Sciences

A+ Anthropology

A+ Anthropology is a behavioral science that focuses on the study of humanity and culture. Anthropologists research the characteristics and origin of the cultural, social, and physical development of humans. They may also determine why some

cultures change and other cultures come to an end. Students learn the foundations of the five main branches of anthropology including physical, social, linguistic, archaeology, and cultural. They are provided the opportunity to apply their observational skills to the real-life study of cultures in the United States and around the world.

A+ Psychology

Psychology is one of the behavioral sciences and encompasses the study of the human mind. Psychologists use laboratory research and observation to determine how people's thoughts influence their actions. Social psychologists focus on how members of a group interact with each other. Students examine how these interactions can lead the group to agreements and success or disagreements and failure. Students will also explore how people use their mental processes to learn, solve problems, and face the challenges of their daily lives.

A+ Sociology

The Sociology course presents sociology as the behavioral science of groups, communities, and societies. The process of socialization, norms, folkways and mores, scientific research, social behavior, social institutions, culture, population, minorities, and changes to the informal and formal structure of the society are explored in depth. Students are led through a series of study units where they apply research strategies to the detailed examination of sociological data and statistics from numerous studies by various United States federal agencies.

Career & Technical Education Programs of Study

Accounting & Related Services Program

Computer Technology

This course is designed to provide students with an opportunity to develop basic computer technology skills. Students will practice the touch method of keyboarding, stressing development of accuracy, speed and control of the keyboard; learn basic formatting techniques using word processing software with emphasis on correspondence, reports, and tables; an introduction to business documents; and the 10-key pad by touch, including basic math applications. Introductory units of instruction are also offered in spreadsheet software and presentation software. Students will learn and apply Internet skills throughout course. In addition, students will be introduced to general business concepts. Communication and language skills will be incorporated into units of instruction. A career investigation project is the culminating activity in this course.

Accounting

This course provides students with basic accounting principles that will be beneficial throughout life, whether they go on to college or seek employment after completing high school. Students will learn the double-entry system of accounting and apply it

through completing the accounting cycle for different types of business organizations. Students will also be introduced to banking and payroll procedures. An Accounting simulation will be the culminating project for this course. Prerequisites for this course are Computer Technology. ***Tech-Prep-Eastern Arizona College articulated credit course sequence.**

Advanced Accounting

Advanced Accounting, primarily an independent study course, is for the student who wishes to understand the advanced principles and procedures that are applied to accounting records. The course elaborates upon the accounting principles and procedures from Accounting. In addition the student will be introduced to the voucher system of accounting and accounting for a partnership, accounting for a corporation, departmental, branch and manufacturing accounting. Emphasis throughout the year will be placed on understanding business information. Computerized accounting is integrated with the course throughout the entire second semester, including several simulations. The culminating project for this course will be an employability skills project, which will include a personal portfolio of their work during this course. Prerequisites for this course are Accounting.

Business Operations Support & Assistant Services Program

Computer Technology

This course is designed to provide students with an opportunity to develop basic computer technology skills. Students will practice the touch method of keyboarding, stressing development of accuracy, speed and control of the keyboard; learn basic formatting techniques using word processing software with emphasis on correspondence, reports, and tables; an introduction to business documents; and the 10-key pad by touch, including basic math applications. Introductory units of instruction are also offered in spreadsheet software and presentation software. Students will learn and apply Internet skills throughout course. In addition, students will be introduced to general business concepts. Communication and language skills will be incorporated into units of instruction. A career investigation project is the culminating activity in this course.

Business Technology

This course is designed to provide students with an opportunity to develop intermediate computer technology skills as they relate to the world of business. Students will learn the intermediate features of Microsoft Word to prepare to become MOS (Microsoft Office Specialist) certified. They will apply these features in formatting and keying intermediate level business documents such as correspondence, reports, tables, and forms. Students will be introduced to voice recognition technology and have the opportunity to apply this skill throughout the course. Students will learn and apply basic desktop publishing skills using desktop publishing software. Internet skills, as they apply to the business world, will be incorporated throughout the course. A job skills project is the culminating activity in this course. Prerequisites for this course are Computer Technology.***Tech-Prep-Eastern Arizona College articulated credit course sequence.**

Business Operations I

This course is designed to give students an opportunity to further develop technical knowledge and skills associated with functions essential for a business operation. In addition, students will have the opportunity to learn more in-depth processes that relate to the business world. Students will learn the features of Microsoft Excel and Microsoft PowerPoint in preparation of becoming MOS (Microsoft Office Specialist) certified. Students will apply these and previously learned skills through units of instruction in Marketing, Economics & Personal Finance, Business Law, Accounting, Management, International Business, and Entrepreneurship. The development of an individual career plan is the beginning unit in this course, and the creation of a business plan is the culminating unit. Prerequisites for this course are Business Technology.***Tech-Prep-Eastern Arizona College articulated credit course sequence.**

Business Operations II

This course provides students with an opportunity to apply technical knowledge and skills to real-life situations through a "work-based learning" approach. In addition, students will have the opportunity to develop interpersonal skills and become prepared to participate in teams to solve problems and think critically about business related issues and implement effective solutions. Students will learn the features of Microsoft Access in preparation of becoming MOS (Microsoft Office Specialist) certified. In addition, students will become familiar with web page design software. Students will work with all aspects of running "Rider Enterprises"—vending machine, school store, copy center, desktop publishing, poster printer, T-shirt press, etc. for local business owners, community members, etc., in addition to performing similar tasks for the high school and school district. Students will also be responsible for updating the school web site and creating the school newsletter. The culminating project for this course will be an employability skills project, which will include a personal portfolio of their work during this course. Students will also have the opportunity to test for their Microsoft Office Specialist certifications. Students should have taken or be concurrently enrolled Business Operations I.***Tech-Prep-Eastern Arizona College articulated credit course sequence.**

Cabinetmaking Program

Introduction to Cabinetmaking

Intro to cabinetmaking acquaints the student with the essential principals of cabinetmaking. Topics include wood technology use of hand tools, portable power tools, and cabinetmaking machinery. Emphasis is place on safety, and shop policies & procedures. Students are required to complete several projects designed to develop beginning cabinetmaking skills. Instruction is provided in wood products, structural design, working drawings, materials list, measurement & dimensions, machine methods & processes, application of safe & proper procedures.

Cabinetmaking

Cabinetmaking increases student skills in the use of power tools & cabinetmaking machinery. Student will learn advanced techniques & processes that pertain to

custom cabinetmaking design & construction, panel construction, & freestanding furniture. Instruction includes cabinet design, cutting, shaping, forming, wood finishing, lathe operation, and application of safe & proper procedures. Prerequisites for this course are Introduction to Cabinetmaking.

Advanced Cabinetmaking

Advanced cabinetmaking increases student skills in the use of power tools & cabinetmaking machinery. Student will learn advanced techniques & processes that pertain to custom cabinetmaking design & construction, panel construction, & freestanding furniture. Instruction includes cabinet design, cutting, shaping, forming, wood finishing, lathe operation, and CNC machining. Students should have taken or be concurrently enrolled Cabinetmaking.

Graphic Communications Program

Introduction to Commercial Art

Intro to commercial art is a one-year course organized to provide students with creative experiences that allow for aesthetic expression and assessment as well as the study of art and artists in our culture. Varied activities and media will be used including drawing, painting, sketching, color theory, lettering, etching, and printing processes, stained glass, ceramics, and additional crafts and art media. In addition, design elements and principles will be explored through the study of the art processes and the production of art products. Intro to Commercial Art is the pre-requisite for Graphic Design.

Graphic Design

Graphic design is a one-year course designed Emphasis will be on the use of design techniques and principles in the creation of artistic visual images, creative expression, aesthetic assessment and photography in our cultural heritage. An introduction will be given to digital photography and the use of Photoshop software program. Students will be introduced to Adobe Page Maker and Adobe Photoshop and other computer software. Typing, computer, art and photography skills are required. Prerequisites for this course are Introduction to Commercial Art.

Advanced Graphic Design

Students will design and create a variety of projects including but not limited to the Pima High School Roughrider yearbook utilizing Adobe Page Maker and Adobe Photoshop. Student duties will include photographing school events and activities, selling ads, writing copy, graphic layout, and collection of data. Typing, computer, art and photography skills are required. Prerequisites for this course are Graphic Design. This course may only be taken with permission from the instructor and prerequisite courses have been successfully completed.

Welding Technologies Program

Welding Core

The welding core curriculum is designed to expose students to metalworking. Instruction includes career planning, preparing for employment, work-based learning, oral and written communication skills, understanding the role of small businesses and financial management, workplace leadership styles and leadership development. The program is designed and delivered as a coherent sequence of experiences using technical instruction, experiential learning, supervised occupational experience, leadership and personal development through the career and technical student organization, Skills/USA.

Welding I

Welding I prepares individuals to apply basic technical knowledge and skills to join or cut metal surfaces. Instruction will provide the students with the basics of safety, welding, material identification and entry-level fabrication techniques. The following will be introduced within the areas of Oxygen/Acetylene Welding, Arc Welding, Oxygen/Acetylene Cutting, and Tools for Fabrication. Prerequisites for this course are Welding Core.

Advanced Welding

This course prepares individuals to apply advanced technical knowledge and skills using a variety of welding techniques and equipment. Instruction includes Welding and Cutting Theory, Inspection and Testing, Electrical Fundamentals, Drawing and Welding Symbols, Fabrication Principles and Practices and Safety. Students will advance their knowledge and talents in all areas taught and are expected in the metalworking industries. Students will incorporate abilities learned in previous classes to design and build projects using multiple disciplines. The following will be introduced within the areas of Plasma Arc Cutting, Forging, Gas Metal Arc Welding. Prerequisites for this course are Welding I.***Tech-Prep-Eastern Arizona College articulated credit course sequence.**