

ROCKINGHAM CO
PUBLIC SCHOOLS

2026-2027

Middle School & High School
Course Catalog

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GRADE 6 REQUIRED COURSES

English 6

A course in reading, writing, and communication with concentrated efforts placed on preparing students for the Virginia SOLs.

Math 6

Math 6 emphasizes basic mathematical skills, focusing on rational numbers and pre-algebra concepts. Students solve multi-step problems in a variety of contexts. Concentrated efforts are placed on the Virginia SOLs.

Science 6

In this Earth Science based course, students explore the characteristics of their world. They learn about Earth's placement in the solar system as well as the role, importance and interactions of water, energy, air, and ecosystems on the Earth. Students also closely examine the use of natural resources and the role of humans in preserving our planet. Students continue to develop scientific skills and processes as they pose questions and predict outcomes, plan and conduct investigations, collect and analyze data, construct explanations, and communicate information about the natural world. The CER process is emphasized throughout this course.

U.S. History to 1865

U.S. History (Part I) examines the events, people, and movements that shaped American history through the end of the Civil War. This course highlights Native American life, European exploration of the New World, events surrounding the American Revolution, the Constitution, westward expansion, and the causes and events of the Civil War. Students will develop skills in critical thinking, primary source analysis, research, communication, and historical writing. Students will participate in a variety of projects and assessments, including at least four locally-developed performance assessments.

6th Grade Physical Education and Health

Emphasis is on physical fitness, lead-up game situations and basic ball handling skills, recreation and lifetime activities. Health instruction includes safety on the school bus, at home, and with strangers, improving self-concept, how to deal with drugs, and family life education.

GRADE 6 ELECTIVE COURSES

Certain Electives May Not Be Available At All Schools

Band

Students learn to play a band instrument in an ensemble setting. Students may purchase their own instrument, rent, or use a school owned instrument. Come Join the Band!

Challenges of the Mind

This course stimulates creative and critical thinking skills. Students solve problems in fun, unique ways using different strategies and ideas. Divergent thinking is encouraged to discover alternative solutions to unusual problems. *For Challenge students only*

Reading 6

This class is required for identified students who are reading below grade level who have had difficulty with the SOL test in fifth grade, or who need encouragement to read more. Students have an opportunity to increase their reading levels. Direct reading instruction is given as well as instruction in organizational skills, test taking strategies and independent reading.

Sixth Grade Exploratory Activities are offered to encourage students to explore their interests

Agriculture

Students explore science as it relates to agriculture and develop an understanding of human relations, communication, the importance of agriculture to the economy, and key scientific terms related to the field of agriculture.

Art

Students will explore art in a variety of materials as it relates to the visual arts Standards of Learning. Students will also develop an appreciation for art and the role of the artist in society.

Business

This course is designed to introduce middle school students to the basics of computers, keyboarding skills, and potential careers. Students will develop and enhance touch skills for entering information using a keyboard to compose and produce personal, educational, and professional documents.

Choir

Students will explore the fundamentals of vocal music, including proper singing technique, pitch, rhythm, tone, and musical expression. They will gain experience performing a variety of musical styles both individually and as part of an ensemble, while developing confidence, teamwork, and an appreciation for choral music.

Family and Consumer Sciences

Students focus on areas of individual growth such as personal goal achievement, responsibilities within the family, and accountability for personal safety and health. They also explore and practice financial management, clothing management, food preparation, positive and caring relationships with others, and career exploration.

Music

Students will explore and create music using a variety of instruments, technology and singing.

Technology and Engineering

Students study the resources of all technology and engineering, including tools, energy, materials, people, time, information, and capital. They explore systems of technology and engineering, including medical, agricultural and related biotechnologies, energy and power, information and communication, transportation, manufacturing, and construction. Students relate the impact of technology on society, environment, and culture to future consequences and decisions.

Theatre Arts Exploratory

An exploration of the fundamental elements of drama. Through experiences involving dramatic play, pantomime, improvisation, and acting, students will develop confidence, concentration, and self-discipline. This course is designed to expose students to theatre arts and foster an appreciation of theatrical performance.

World Languages and Cultures (9 weeks)

This course is intended to give students an overview of several languages and cultures. Conversational phrases in several languages are included with an emphasis of French, Latin and Spanish.

GRADE 7 REQUIRED COURSES

English 7 (year)

A course in reading, writing, and communication with concentrated efforts placed on preparing students for the Virginia SOLs.

U.S. History: 1865 to the Present

U.S. History (Part II) examines the events, people, and movements that shaped American history from the end of the Civil War to the present day. Students will explore the political, social, and economic events such as Reconstruction, Westward Expansion, Industrialization, Imperialism, the Great Depression, the World Wars, the Civil Rights movement, the Cold War, and many others. Students will develop skills in critical thinking, primary source analysis, collaborative projects, research, and digital media presentations. Students will participate in a variety of projects and assessments, including at least four locally-developed performance assessments.

Math 7 (year)

Math 7 is designed to provide students with a solid foundation in basic math skills, real-life applications, and pre-algebra concepts. Students focus on proportional reasoning, integer computation, and linear equations. Students that demonstrate readiness might be exposed to standards beyond Math 7. Concentrated efforts are placed on the Virginia SOL.

Life Science 7

Science 7 focuses on life and its processes. Students will identify the characteristics of the 6 main kingdoms, characteristics and needs of living things, the interdependence that occurs between living organisms and the environment, ecosystem dynamics, adaptations of organisms, organization of living things (including the structure and function of cells), photosynthesis and respiration, natural selection, genetics, and changing natural environments and man’s impact on them. Students continue to develop scientific skills and processes as they pose questions and predict outcomes, plan and conduct investigations, collect and analyze data, construct explanations, and communicate information about the natural world. The CER process is emphasized throughout this course.

7th Grade Physical Education & Health (year)

Skills for team sports are practiced and played. Circuit training, indoor recreation sports, track and field, and physical fitness are an important focus. Health consists of units on hunter education, nutrition and eating disorders, tobacco and street drugs, and family life education.

GRADE 7 ELECTIVE COURSES

Certain Electives May Not Be Available At All Schools

Agricultural Science 7 (semester)

Students are introduced to natural resources, plant science, small animals, woodworking, and personal development. Basic agricultural literacy, ecology, and water are fundamentals of this course. Personal development and leadership skills are also stressed. Basic woodworking skills are taught using power and hand tools and various fasteners. Students have the opportunity to join and participate in the FFA organization which teaches responsibility and leadership.

Art 7 (semester)

This class is the natural next step from the sixth grade art exploratory class for those students who enjoy and appreciate art. The emphasis is on visual communication, basic design principles, how to improve drawing techniques, gaining experience in many art media, and the student's concern for realistic representation. 3D Projects vary and could include: clay and glazing, weaving, wood, papier-mâché, sculpey, paper, plastic, mosaics, batik or tie dye, found object, and bead work. Each area of study will include lessons on famous artists and various world cultures.

7th Grade Band Class (year)

This class is for 7th graders who have either successfully completed the 6th grade Band class, or are wishing to begin playing an instrument for the first time. Emphasis is on the continued development of music fundamentals, and developing both musicianship and music interpretation with more emphasis on performance. Students participate in several school programs. There will be some out of class requirements of concerts throughout the year.

Jazz Band (year) – By Permission

This class is for 7th and 8th grade advanced players who play a standard jazz band instrument. Emphasis is on performance of jazz, popular, and rock music. This class performs at school programs, pep rallies, and ball games, and is available for out-of-school performances. This class also participates with their grade level band classes for school programs.

Business: Make It Your Business (semester)

Students design, establish and operate a small group or class business, producing a service or product that meets an identified school or community need.

Emphasis is placed on the introduction and application of business terminology, basic entrepreneurship concepts, and fundamental business principles. Basic academic skills (mathematics, science, English, and history/social science) are integrated into this course.

Business: Digital Technology (semester)

This foundation course introduces the use of relevant and emerging technologies, tools, and applications to prepare students for current workplace practices and everyday life. Students will demonstrate information processing using a variety of hardware, software and internet-based tools to produce and integrate data in various formats. This course is designed for students wishing to progress through more advanced business and information technology coursework.

Challenges of the Mind (semester/year)

This course stimulates creative and critical thinking skills. Students solve problems in fun, unique ways using different strategies and ideas. Divergent thinking is encouraged to discover alternative solutions to unusual problems. *For Challenge students only*

Chorus 7 (semester/year)

This class gives students experience in singing both unison and part songs in a variety of styles. Students will learn to sing with proper posture, breath and vowel formation. They will develop sight-reading skills, work as an ensemble, and perform in the school and community with a desirable level of professionalism. Emphasis will be given to listening and understanding music from historical, theoretical and cultural perspectives.

Economics (Semester)

Students create a classroom society based on the study of economics principles. The 10-week interactive Stock Market Game is a component of this class as well as the fundamentals of entrepreneurship.

Family & Consumer Sciences (semester)

This course provides a foundation for managing individual, family, work, and community roles and responsibilities. Students will focus on their individual development and their relationships and roles within the family unit. They will learn how to maintain their living and personal environments and to use nutrition and wellness practices. Students will also apply consumer and family resources, develop textile, fashion, and apparel concepts, and explore related careers. Time is also provided for developing early childhood education concepts and leadership skills.

Introduction to French (semester)

This semester course will help students to build a foundation in French through themed based units.

Inventions & Innovations (semester)

Students develop problem-solving skills as they study, invent, and build examples of past, present, & future technology. Each student participates in a variety of hands-on activities from a variety of technological areas, such as electricity, wood manufacturing, mechanical technology, transportation, and aerospace. Students study the impact technology has had on our world. Activities include: drafting, research and design, as well as individual projects. Students can become a member of the Technology Students Association (T.S.A.).

Musical Theatre 7 (semester/ year)

A collaborative effort between the music and theatre arts departments, this class provides students with the opportunity to get their feet wet performing musical theatre repertoire on stage. Students will actively engage in all aspects of the production for a musical performance, developing their choreography, vocal, and acting skills. Employing teamwork and cooperation, students will create and present a full-scale musical or revue showcasing their accomplishments and growth.

Introduction to Spanish (semester)

This semester course will help students to build a foundation in Spanish through themed based units.

Orff Ensemble (semester/year)

Orff offers students the opportunity to develop basic percussion and musicianship skills as they play xylophone, metallophones, drums and other percussion instruments. Students will be exposed to a variety of musical styles and learn to perform with a desirable level of professionalism. Special attention will be given to music reading skills and the study of pertinent composers. Students will also participate in a performance ensemble.

Theatre Arts 7 (semester/year)

Students develop and refine skills in pantomime, improvisation, and acting. Utilizing teamwork and cooperation students collaborate to create original and scripted performances. Students are introduced to the dramatic elements of costuming, stage lighting, and production. The importance of drama as a literary art form is explored.

YES

The program promotes life-long and academic learning skills. Tutorial classes work to improve core subject performance and SOL scores, along with enhancing self-esteem.

GRADE 8 REQUIRED COURSES

Algebra I (SOL TEST)

1 HS Math Credit
Algebra I in grade 8 is designed for the advanced math student. The course presents foundational algebraic concepts needed for successive math courses. All students are expected to achieve the Algebra I standards; students who elect to take this course complete those standards in one year.

Civics/Economics (year)

Civics and Economics explores America's democratic system of government and its correlating capitalist economic system. A large portion of the course examines the three branches of government at the national, state and local level. This provides an excellent framework for exploring the role that individual citizens play at each level of government. The second half of the course examines the American economic system in the United States, including the relationship between citizens, businesses, and the government within the economy. Students will develop skills in analysis, critical thinking, and collaboration, as well as the desire to become active and engaged citizens. Students will participate in a variety of projects and assessments, including the Civics and Economics SOL test.

English 8 (year)

A course in reading, writing, and communication with concentrated efforts placed on preparing students for the Virginia SOLs.

Math 8 (year)

This course is required for students not taking Algebra I. Students strengthen their basic skills and gain proficiency with rational numbers and proportional reasoning. Students are introduced to foundational geometric and algebraic concepts. Students that demonstrate readiness might be exposed to standards beyond Math 8. Concentrated efforts are placed on the Virginia SOLs.

Physical Science 8 (year)

In this laboratory-oriented course students study basic concepts of their physical world through the interactions of matter and energy. Students will review concepts from 6th and 7th grade science throughout the course. Students continue to develop scientific skills and processes as they pose questions and predict outcomes, plan and conduct investigations, collect and analyze

data, construct explanations, and communicate information about the natural world. The CER process is emphasized throughout this course.

8th Grade Physical Education & Health (year)

This class strongly emphasizes wellness activities. Students choose between team and individual sports. Team sports include football, soccer, speedball, basketball, softball, volleyball, and floor hockey. Individual sports include tennis, circuit training, and indoor/outdoor recreational activities.

GRADE 8 ELECTIVE COURSES

Certain Electives May Not Be Available At All Schools

Agriculture Science 8 (semester or year)

A course designed to give students a variety of studies and hands-on activities in ecology, woodworking, horticulture, arc welding, and animal studies. Personal development/leadership, business management, agriscience career exploration, forestry, large animal science, plant technology, hydroponics, public speaking, parliamentary procedure, soil science, as well as community involvement skills form the heart of this course. The FFA organization is an integral part of the curriculum.

Foundations of Agriculture, Food, and Natural Resources (Farm to Plate)

1 HS Credit Possible
This course develops a foundation in each of the career pathways in agriculture, food, and natural resources (AFNR), including the global scope of agriculture; concepts in plant, animal, and food science; natural resources and environmental systems; agricultural skills and safety in power, structural, and technical systems; and agribusiness. Contextual instruction and student participation in FFA activities will develop leadership, interpersonal, and career skills.

Art 8 (semester/year)

Elements and principles of design, expression through the use of various materials, and art in today's society are emphasized. Students practice the "Language of Design," describe, analyze, interpret, and evaluate when viewing works of art. This class is for students planning to continue in art, as well as beginners.

Beginning Guitar (semester)

This course will focus on students learning the fundamentals of music, including proper care and handling of the guitar, proper playing technique (chords and melodies), reading music and other forms of notation, playing various styles and genres, and developing good practice skills. A primary goal of this class is the development of individual musical skill.

8th Grade Band (year)

This class is for those 8th graders who have either successfully completed a previous year of band class or are wishing to begin playing an instrument for the first time. Emphasis is on the continued development of music fundamentals, and developing both musicianship and music interpretation with more emphasis on performance. Students participate in several school programs. There will be some out of class requirements of concerts throughout the year.

Jazz Band Class (year) – By Permission

This class is for 7th and 8th grade advanced players who play a standard jazz band instrument. Emphasis is on performance of jazz, popular, and rock music. This class will perform at school programs, some pep rallies, ball games, and out-of-school performances. This class participates with their grade level band classes for school programs.

Challenges of the Mind (semester/year)

This course stimulates creative and critical thinking skills. Students solve problems in fun, unique ways using different strategies and ideas. Divergent thinking is encouraged to discover alternative solutions to unusual problems. *For Challenge students only*

Chorus 8 (semester), Chorus 8 (year)

This class will give students experience in singing both unison and part songs in a variety of styles. Students will learn to sing with proper posture, breath and vowel formation. They will develop sight-reading skills, work as an ensemble, and perform all music with a desirable level of professionalism. Emphasis will also be given to listening and understanding music from historical, theoretical and cultural perspectives. The Choir presents concerts during the year and performs at community events.

Family & Consumer Sciences (semester), Family & Consumer Sciences (year)

This course provides a foundation for managing individual, family, career, and community roles and responsibilities. Students focus on their roles in the community and how the community influences individual development. Students will develop change-management and conflict–resolution skills and examine how global concerns affect communities. They will enhance their knowledge of nutrition and wellness practices, and learn how to maximize consumer and family resources. The course also helps students apply textile, fashion, and apparel concepts to their daily lives and provides background on the stages of early childhood development. Time is provided for exploring careers in FACS and developing job-search skills. Students also increase their leadership abilities and explore volunteerism.

Information Technology (IT) Fundamentals

1 HS Elective Credit

Students are introduced to the essential technical and professional skills required for students to pursue a program leading to professional careers and IT certifications. Students investigate career opportunities and technologies in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media. Students will evaluate the impact of IT on other career clusters. The focus of the IT Fundamentals course is the introduction of skills related to information technology basics, internet fundamentals, network systems, computer maintenance/upgrading/troubleshooting, computer applications, programming, graphics, web page design, interactive media, and coding. Students explore ethical issues related to computers and internet technology and develop teamwork and communication skills that will enhance further education and employment.

French I (year)

1 HS Credit

French I introduces the student to the basic communication skills, which incorporate listening, speaking, reading and writing. A variety of common discussion topics as well as an introduction to cultures in the French-speaking world are studied. Emphasis is on basic communication in real life situations.

Orff Ensemble (semester/year)

Orff offers students the opportunity to develop basic percussion and musicianship skills as they play xylophone, metallophones, drums and other percussion instruments. Students will be exposed to a variety of musical styles and learn to perform with a desirable level of professionalism. Special attention will be given to music reading skills and the study of pertinent composers. Students will also participate in a performance ensemble.

Developmental Reading 8 (year)

This class may be required for identified students who are reading below grade level who have had difficulty with the SOL test in previous grades, or who need encouragement to read more. Students have an opportunity to increase their reading levels. Direct reading instruction is given as well as instruction in organizational skills, test-taking strategies and independent reading. Qualifying students are automatically scheduled for this class.

Mentorship 8

This course encourages leadership skills, community outreach, peer mentorship, and connections with other students with varying abilities across multiple grade levels. Students will learn to maximize their potential, develop interpersonal skills, and build confidence through community and school based service projects.

Musical Theatre 8 (semester/ year)

A collaborative effort between the music and theatre arts departments, this class provides students with the opportunity to get their feet wet performing musical theatre repertoire on stage. Students will actively engage in all aspects of the production for a musical performance, developing their choreography, vocal, and acting skills. Employing teamwork and cooperation, students will create and present a full-scale musical or revue showcasing their accomplishments and growth.

Spanish I (year)

1 HS Credit
Students are introduced to the basic communication skills (listening, speaking, reading, and writing) through the exploration of relevant topics and the cultures where Spanish is spoken. There is an emphasis on transitioning to a novice mid-level.

STEM 8

A hands-on study of alternative energy activities that support the national standards. This course uses science inquiry and integrated activities to solve real world problems and to explore careers in the alternative energy field. The topics include energy issues, air power, solar power, biomass and hydrogen fuel cells. These topics demonstrate how science, technology, engineering, and mathematics can be applied to problems in this field. We will also explore how safe vehicles are built and how roller coasters are designed.

Technical Drawing and Design (year)

1 HS Credit
In this foundational course, students design, sketch, and make technical drawings, models, or prototypes of real design problems while learning the language of technical drawing and design. The course introduces the language of graphic communication to all science, technology, engineering, and mathematics (STEM) students and is especially recommended for those planning a future in engineering and architecture. Contextual instruction and student participation in TSA activities will develop leadership, interpersonal, and career skills.

Technological Systems (semester/year)

This course is an in-depth “hands on” study of Technology's impact on people and their work. Students apply math, science, and language arts to solve problems and create new systems or products by exploring various areas of technology. Emphasis is given to critical thinking. Students work on individual and group projects and/or modules in areas such as electricity, audio production, transportation, aerospace, communication technology, computer technology, energy and power, structures, desktop publishing, woodworking, and robotics. Hand and machine tools are used. Students can become a member of T.S.A.

Theatre Arts 8 (semester/year)

Through an in-depth study of theatre elements and character development, students create and perform more complex individual and group projects. Theatre history and its cultural impact on society will be examined. Students' analytical, collaborative, problem-solving, and critical-thinking skills are refined and strengthened by participation in dramatic performances.

Work Study

Students do volunteer work within the school. Some students opt for peer tutoring. Peer tutoring provides nondisabled students an opportunity to assist students with disabilities in a variety of activities under teacher supervision. Others opt for working with and under supervision of the school staff.

YES

The program promotes life-long and academic learning skills. Tutorial classes work to improve core subject performance and SOL scores, along with enhancing self-esteem.

High School Course Listings by Category

English

Each school will determine grouping for English instruction. Students may choose rigorous college preparatory or "Honors" classes, which require reading of complex classical and contemporary literature, or regular English classes, which offer students a variety of reading experiences with both classical and contemporary literature. All levels focus on skills and competencies necessary for Virginia's Reading and Writing SOL tests.

Creative Writing (Elective)

1/2–1 Credit · Grades 9–12 · No Prerequisite
Creative Writing is a year or semester-long course devoted to writing short stories, poetry, plays, songs, personal essays, and producing school-wide literary publications. Each student will utilize a variety of techniques to promote quality writing, with an emphasis on revision, peer editing, and whole class sharing.

English 9

1 Credit · Grade 9 · Prerequisite: English 8 or Equivalent
The ninth-grade student will plan, present, and critique dramatic readings of literary selections. Knowledge of literary terms and forms will be applied in the student's own writing and in the analysis of literature. The student will be introduced to significant literary works. Increased requirements for research and reporting in all subjects will be supported by the use of print, electronic databases, online resources, and a standard style sheet method to cite reference sources. The student will distinguish between reliable and questionable Internet sources. Writing will encompass narrative, literary, expository, and informational forms, with particular attention to analysis. The student will demonstrate correct use of language, spelling, and mechanics by applying grammatical conventions in writing and speaking.

English 10

1 Credit · Grade 10 · Prerequisite: English 9 or Equivalent
The tenth-grade student will become a skilled communicator in small- group learning activities. The student will read and critique literary works from a variety of eras and cultures. Attention will be given to the analysis of consumer information, such as labels, owners' manuals, warranties, and contracts. The student will critique the writing of peers and professionals, using analysis to improve writing skills. The student will continue to build research skills by crediting sources and presenting information in a format appropriate for content. Grammar knowledge will be expanded as the student presents, writes, and edits materials, applying the conventions of language.

English 10 Advanced

1 Credit · Grade 10 · Prerequisite: English 9 or Equivalent
Students will be additionally encouraged to work at a pace designed to prepare them for the academic challenges that lie ahead, a pace requiring work to be done outside of the classroom, and one that requires discipline and individual responsibility on behalf of the college preparatory student.

English 11 (SOL Test)

1 Credit · Grade 11 · Prerequisites: English 9 & 10 or Equivalent
The eleventh grade student will be able to make and analyze informative and persuasive oral presentations, with attention to the accuracy of evidence and the effectiveness of delivery. The study of both classic and contemporary American literature will enhance the student's appreciation for literature. The student will be able to identify the prevalent themes and characterizations present in American literature, which are reflective of the history and culture. The student will be able to write clear and accurate personal, professional, and informational correspondence and reports for research and other applications. Grammar development will continue through the application of rules for sentence formation, usage, spelling, and mechanics. The student will develop informative and persuasive compositions by locating, evaluating, synthesizing, and citing applicable information with careful attention to organization and accuracy.

Honors English 11

1 Credit · Grade 11 · Prerequisites: English 9 & 10 or Equivalent
English 11 Honors is designed to prepare students for the advanced reading and writing necessary for success in higher education, most professions, and in the pursuit of meaningful lives. The course focuses on literary analysis – teaching students to read carefully for themes and subtext through analysis of the techniques employed by the great writers of the past and present. Students will focus primarily on American literature and will read from novels, short stories, poems, essays, and drama. In an honors level English class, students will be responsible for completing reading and writing assignments outside of class, and they will be held to a higher standard than students in a regular English 11 class. Students will write in a variety of modes (expository, analytical, persuasive, and research). Through a deeper understanding of diction, detail, and tone, students will fine-tune their prose style to better engage their readers. By crafting essays and oral presentations, students will learn to employ the various tools of persuasion in order to create a solid thesis and compelling arguments. Students will also conduct research that focuses on evaluating sources for reliability, and they will implement correct MLA style when citing information in analytical/research papers. Like all English 11 students, Honors students will prepare for SOL testing.

English 11, Dual Enrollment

1 Credit · Grade 11 · Prerequisites: English 9 & 10 + BRCC Admission + Placement Scores
The first semester introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and argumentation with at least one researched essay. In the second semester, students develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. The course requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. With a "C" or better, students may receive 6 college credits: ENG 111/112.

English 12

1 Credit · Grade 12 · Prerequisites: English 9, 10, & 11 or Equivalent
The twelfth grade student will use organizational skills, audience awareness, appropriate vocabulary and grammar, and both verbal and nonverbal presentation skills to plan and deliver an effective 5-10 minute oral presentation. The student will analyze British literature and literature of other cultures, with attention to the many classic works which may be studied. Writing will include the production of informational and expository papers, which are organized logically and contain clear and accurate ideas. The student will also produce a well-documented major research paper, using a standard method of documentation. The student will demonstrate advanced knowledge of grammatical conventions through writing, editing, and speaking.

English 12, Dual Enrollment

1 Credit · Grade 12 · Prerequisites: English 9, 10, & 11 + BRCC Admission + Placement Scores
The first semester introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and argumentation with at least one researched essay. In the second semester, students develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. The course requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. With a "C" or better, students may receive 6 college credits: ENG 111/112.

Honors English 12

1 Credit · Grade 12 · Prerequisites: English 9, 10, & 11 or Equivalent
Twelfth Grade Honors English prepares students for college by focusing on challenging texts and writing analytical papers and essays. Texts will focus on British literature as well as literature of other cultures, and will include pieces of classic literature, modern fiction, short stories, poems, and non-fiction articles. Writing will include the production of informational and expository papers, which are organized logically and contain clear and accurate ideas. Writing assignments will mimic the kinds of assignments students will encounter in a variety of courses in college. This class will follow the prescribed Standards of Learning and will include writing a well- documented research paper, performing oral presentations, and demonstrating advanced knowledge of grammatical conventions through writing, editing, and speaking.

AP English Language and Composition (Grade 11 – SOL Test)

1 Credit · Grade 11 · Prerequisites: English 9 & 10 or Equivalent
The AP English Language and Composition course is a college-level course designed to help students become skilled readers of prose written in a variety of rhetorical contexts and to become skilled writers who compose for a variety of purposes. Both writing and reading should make students aware of the interactions among a writer's purposes, audience expectations, and subjects, as well as the way generic conventions and the resources of language contribute to effectiveness in writing. As in the college course, the purpose of the AP English Language and Composition course is to enable students to read complex texts with understanding and to write prose of sufficient richness and complexity to communicate effectively with mature readers. Throughout the class, teachers will prepare students to take Advanced Placement tests for Language if they so choose. **Need-based financial assistance is available to take advanced placement exams.

AP English Literature and Composition (Grade 12)

1 Credit · Grade 12 · Prerequisite: English 11 or Equivalent
Advanced Placement English is a college-level class. Students read difficult and enduring literary works and display through both articulate oral and written presentations each work's intent, structure, and meaning. Teachers focus on complexity and sophistication of both thought and expression, especially in students' writing. In addition, students will read scholarly articles, chapters, or books to enhance literature study and/or to synthesize into a research paper. Throughout the class, teachers will prepare students to take the Advanced Placement tests for Literature if they so choose. *Students may be required to complete a summer reading assignment prior to the class. **Need-based financial assistance is available to take advanced placement exams.

English (Writing and Reading) Strategies (Elective)

1/2–1 Credit · Grade 12 · Prerequisites: Two Unsuccessful SOL Attempts
The course will focus on preparing students to pass the Virginia Standards of Learning (SOL) Writing test and/or (SOL) Reading Test at 11th grade (after two unsuccessful attempts). Specific writing skills to be taught include planning and organizing writing, communicating purpose,

selecting specific vocabulary, revising for clarity, and editing for correct use of language, spelling, punctuation, and capitalization. The main area of emphasis in the reading course will be reading comprehension strategies.

Photojournalism I (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Students may do basic units in photography, videography, interviewing, news and feature writing, layout, news casting and production. Their work may be published in the yearbook, newspaper, school newsletter or presented on the school news show. There is a class fee.

Photojournalism II (Elective)

1 Credit · Grades 10–12 · Prerequisite: Photojournalism I
Students may do advanced units in videography, news production, technical equipment, layout, narration, studio and communications as a business. Their work is published in the newspaper or yearbook or aired on the school news show. There is a class fee.

Photojournalism III (Elective)

1 Credit · Grades 11–12 · Prerequisite: Photojournalism II
Students take leadership roles in the production of school publications and expand their photojournalism skills as mentors for each news staff. There is a class fee.

Photojournalism IV / Photographic Design (Elective)

1 Credit · Grade 12 · Prerequisite: Photojournalism III or Instructor Approval
This course is designed to introduce students to the basics of digital photography and digital imaging with an emphasis on aesthetic, technical, and critical thinking skills. Student work will be project-oriented and outcome-based. Required work will include the use of digital technology (hardware and software) necessary to do the required projects. In addition, the students will learn about the historical and cultural impact of photography and the ethics of digital photography in today's world.

Reading (Elective)

1 Credit · Grades 9–10 · Prerequisite: Below Grade-Level Reading or Failed Grade 8 SOL
This course may be required for selected ninth and tenth graders reading below grade level and/or if the student does not pass the eighth grade reading SOL test. Given the increased number of ideas high school students are expected to know, reading provides additional practice in how to understand what students read. Ongoing classroom assessments pinpoint specific instructional needs of each student.

Public Speaking (Dual Enrollment)

1 Credit · Grades 11–12 · Prerequisites: English 9 & 10 + BRCC Admission + Placement Scores
This course examines the elements affecting speech communication at the individual, small group, and public communication levels with emphasis on practice of communication at each level. With a “C” or better, students may receive 6 college credits: CST 110. *This is part of the lab school courses, and only available to lab school students.

English Language Learners (ELL)

English Language Learners

1 Credit · Grades 9–12 · No Prerequisite
ELL is a course for students whose primary language is not English and whose limited linguistics skills prevent success in the regular English grammar and syntax through the four skill areas (reading, writing, speaking, and listening). The second two levels, while refining grammatical skills, will include intensive training in reading and literary analysis, written composition and public speaking. ELL elective English and World Language credits may be earned.

EL I for Newcomers

2 Credits (Two Blocks) · Grades 9–12 · No Prerequisite
EL Newcomer students improve their skills in the four modes of communication: reading, writing, listening, and speaking. Linguistic instruction, decoding, and comprehension are interwoven for effective language instruction. Students incorporate new, relevant vocabulary and structures to talk about themselves and their experiences. This personal focus broadens as the year progresses to include additional topics of relevance to students and academic vocabulary from core content that they will encounter early in their high school career.

EL I

1 Credit · Grades 9–12 · No Prerequisite
Level 1 English learners emerge into English language proficiency and English literacy skills. Level 1 learners engage in foundational English language development in the four domains of language: reading, writing, listening, and speaking. Beyond survival English and social English proficiency, academic focus is on foundational English grammar and literacy skills, as well as functional communication in an academic setting. This course is aligned to the WIDA English language development (ELD) standards for high school.

English Learners IE (English 9)

1 Credit · Grades 9–12 · No Prerequisite
English learners will develop their English language proficiency and English literacy skills by

engaging in academic language development in the four domains of reading, writing, listening and speaking. This course is aligned to the WIDA English language development (ELD) standards. Knowledge of literary terms and forms will be applied in the student's own writing and in the analysis of literature. The student will be introduced to a variety of literary works. Writing will encompass narrative and informational forms, with emphasis on analysis. The student will demonstrate correct use of language, spelling, and mechanics by applying grammatical conventions in writing and speaking.

EL II

1 Credit · Grades 9–12 · Prerequisite: EL I or Equivalent Proficiency
WIDA Level 2 English learners emerge in their English language proficiency and English literacy skills by engaging in academic language development in the four domains of reading, writing, listening and speaking. This course is aligned to the WIDA English language development (ELD) standards and high school SOLs for 9-12.

English Learners IE (English 10)

1 Credit · Grades 9–12 · Prerequisite: EL I or Equivalent Proficiency
English learners develop their English language proficiency and English literacy skills by engaging in academic language development in the four domains of reading, writing, listening and speaking. This course is aligned to the WIDA English language development (ELD) standards. The tenth-grade student will become a skilled communicator in small- group learning activities. The student will read and critique literary works from a variety of eras and cultures. Attention will be given to various forms of nonfiction. The student will critique the writing of peers and professionals, using analysis to improve writing skills. The student will build research skills by crediting sources and presenting information in a format appropriate for content. Grammar knowledge will be expanded as the student presents, writes, and edits materials, applying the conventions of language.

EL III

1 Credit · Grades 9–12 · Prerequisite: EL II or Equivalent Proficiency
WIDA Levels 2 through 4, develop their English proficiency and English literacy skills by engaging in academic language development in the four domains of reading, writing, listening and speaking. This course is aligned to the WIDA English language development (ELD) standards for each linguistic level represented in the class. This course utilizes academic language from the high school standards of learning for English, Math, Science, or History.

English Learners IE (English 11)

1 Credit · Grades 9–12 · Prerequisite: EL II or Equivalent Proficiency
English learners develop their English language proficiency and English literacy skills by engaging in academic language development in the four domains of reading, writing, listening and speaking. This course is aligned to the WIDA English language development (ELD)

standards. The eleventh-grade student will be able to make and analyze informative oral presentations. The study of both classic and contemporary American literature will enhance the student's appreciation for literature. The student will be able to identify the prevalent themes and characterizations present in American literature, which are reflective of the history and culture. The student will be able to write clear and accurate personal, professional, and informational correspondence. Grammar development will continue through the application of rules for sentence formation, usage, spelling, and mechanics. The student will develop informative and persuasive compositions by locating, evaluating, synthesizing, and citing applicable information with careful attention to organization and accuracy.

EL IV

1 Credit · Grades 9–12 · Prerequisite: EL III or Equivalent Proficiency
WIDA Levels 2 through 4, develop their English proficiency and English literacy skills by engaging in academic language development in the four domains of reading, writing, listening and speaking. This course is aligned to the WIDA English language development (ELD) standards for each linguistic level represented in the class. This course utilizes academic language from the high school standards of learning for English, Math, Science, or History.

English Learners IE (English 12)

1 Credit · Grades 9–12 · Prerequisite: EL III or Equivalent Proficiency
English learners develop their English language proficiency and English literacy skills by engaging in academic language development in the four domains of reading, writing, listening and speaking. This course is aligned to the WIDA English language development (ELD) standards. The twelfth-grade student will analyze British literature and literature of other cultures, with attention to the many classic works which may be studied. Writing will include the production of informational, persuasive, and expository papers, which are organized logically and contain clear and accurate ideas. The student will also produce a well-documented research project, using a standard method of documentation. The student will demonstrate knowledge of grammatical conventions through writing, editing, and speaking.

*A student who demonstrates a high level of proficiency in a target language may be recommended by a School Counselor, World Language, or EL teacher to take a proficiency test in the target language to satisfy course work requirements. The test is designed for native and heritage speakers and replaces traditional course work. The test focuses on all four skills (listening, speaking, reading, and writing) and addresses all modes of communication (presentational, interpretive, and interpersonal). A student has the potential to earn 1, 2, or 3 language credits depending on ability and test results. Please contact your school counselor or email the division's EL Supervisor for additional information. Proficiency tests are currently available in the following languages: Arabic, Chinese (Mandarin), English, French, German, Hindi, Italian, Japanese, Korean, Portuguese, Spanish, Russian, and Thai.

Health and Physical Education

Driver Education

The demands of modern day living make the automobile an integral part of everyone's life. Each prospective driver is instructed in driving-related problems, areas of attitude development, knowledge of traffic laws, defensive driving tactics, and operation of the motor vehicle. Driver education is given in 2 parts: 1) classroom instruction and 2) behind the wheel instruction.

The classroom instruction is given in the 1st semester of the 10th grade year in conjunction with the PE 10th grade class. It is also offered during summer school. In order to take behind the wheel instruction, a student must have successfully completed classroom driver education, and must have obtained an instruction (learner's) permit from the Division of Motor Vehicles. The age requirement for obtaining the learners license is 15 years, 6 months. Proof of successful completion of the Virginia Department of Education required driver education course is necessary before any person under the age of 18 may apply for his Virginia Operator's License.

Behind the wheel instruction is available through local private driving schools and is the responsibility of the student and parent/guardian. Students must complete 14 hours (7 driving/7 observing) as required by Virginia law to qualify for a driver's license.

Health & PE 9 (Required)

1 Credit · Grades 9–11 · No Prerequisite
Health and Physical Education I comprises multiple Physical Education units that are taught over the course of two semesters, and five Health units that are taught only during the second semester. Some examples of the possible Physical Education units include: 1) Recreation Activities/Sports (Bowling, Badminton, Table Tennis, Lawn Games, Archery, etc.), 2) Lifetime Activities/Personal Fitness (Dance, Yoga, Weight Lifting, Aerobic Exercise, etc.), 3) Team Sports/Games (Football, Soccer, Volleyball, Basketball, Ultimate Frisbee, etc.). The Health units include: 1) Family Life Education, 2) First Aid, 3) Alcohol, Tobacco and Other Drugs, 4) Mental Health, 5) Wellness.

Health & PE 10 (Required)

1 Credit · Grades 10–12 · Prerequisite: PE 9
Health and Physical Education consists of a Virginia state law minimum of 36 hours of driver education instruction. Fitness/conditioning is also included during the first semester. Students must successfully complete the 36 classroom hours, have a learner's permit, and complete their log book in order to take behind-the-wheel instruction. Virginia state law requires 14 hours of behind-the-wheel instruction (7 hours of actual driving by the student, and 7 hours observing

another student driving in the car). Second semester units that may be offered (depending on teacher certification) include team sports, individual and dual sports (badminton, pickleball, golf, tennis, archery, cycling), and fitness/conditioning.

Advanced PE I (Elective)

1 Credit · Grades 10–12 · Prerequisite: Health & PE 9 and 10
Advanced Physical Education is an elective class for 10th - 12th grade students interested in fitness and enjoyment through a variety of physical activities. The overall objective of the class is to promote wellness and the importance of physical fitness. A special emphasis is placed on weight training. Students will develop a lifting program and record data over a nine-week semester.

Advanced PE II (Elective)

1 Credit · Grades 11–12 · Prerequisite: Advanced PE I
Advanced Physical Education II is an elective class for 11th and 12th grade students interested in improving their overall fitness levels and body composition. Students will be instructed in safe and effective weightlifting techniques, speed development and cardiovascular fitness. Other topics of study will include team sports, individual sports, nutrition, flexibility and the state physical fitness test.

Advanced PE III (Elective)

1 Credit · Grade 12 · Prerequisite: Advanced PE II
This course provides continuation of skills learned in Advanced PE I & II with a focus on weight training.

Mathematics

Algebra I, Part I

1 Elective Credit · Grades 8–12 · No Prerequisite
Algebra I, Part 1 covers the first half of the Algebra I standards, the basis of the mathematics program. The course is immediately followed with Algebra I, Part 2, and upon successful completion of Algebra I, Part 2, students will earn one mathematics credit toward graduation.

Algebra I, Part 2 (SOL Test)

1 Credit · Grades 9–12 · Prerequisite: Algebra I, Part I
Algebra I, Part 2 covers the second half of the Algebra I standards. Students focus on foundational algebraic concepts needed for successive math courses. Upon successful completion of Algebra I, Part 2, students will earn one mathematics credit.

Algebra, Functions, and Data Analysis (AFDA)

1 Credit · Grades 10–12 · Prerequisite: Algebra I (or Algebra I Parts I & II)
This course is designed to be completed prior to Algebra II. Within the context of mathematical modeling and data analysis, students will study functions and their behaviors, systems of inequalities, probability, and experimental design and implementation. Data will be generated by practical applications arising from science, business, and finance. In order for an advanced diploma, the student must also take at least three different course selections from among: Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II.

Algebra II (SOL Test)

1 Credit · Grades 10–12 · Prerequisites: Algebra I (or Parts I & II) and Geometry
Algebra II is designed for students who successfully complete Algebra I and Geometry. A thorough treatment of advanced algebraic concepts is provided through the study of functions, polynomials, rational expressions, complex numbers, and sequences and series. Emphasis is placed on practical applications and modeling throughout the course of study. This course should be taken by all students who are considering college. Algebra II Advanced students will be additionally encouraged to work at a pace and depth designed to prepare them for the academic challenges that lie ahead, a pace requiring a considerable amount of work to be done outside of the classroom, and one that requires discipline and individual responsibility.

AP Calculus

1 Credit · Grade 12 · Prerequisites: Algebra I, Geometry, Algebra II, and Math Analysis (Honors Recommended)
The purpose of the AP Calculus course is to prepare the student for advanced placement in college calculus. The topics covered in the AP Calculus course include those in the College Board Advanced Placement Course Description Syllabus: limits, differentiation, and integration of functions with applications. Students in this course are strongly encouraged, though not required, to take the AP exam, from which the student may obtain college credit. **Need-based financial assistance is available to take advanced placement exams.

Calculus, Dual Enrollment

1 Credit · Grade 12 · Prerequisite: DE Math Analysis + BRCC Admission + Placement Scores
This course presents differential calculus of one variable, including the theory of limits, derivatives, and anti-derivatives and applications to algebraic and transcendental functions. Additional topics include indefinite integrals, definite integrals and methods of integration with applications to algebraic and transcendental functions. With a “C” or better, students may receive five (5) college credits: MTH 263.

Calculus Honors

1 Credit · Grade 12 · Prerequisites: Algebra I, Geometry, Algebra II, Math Analysis
Calculus is intended for students who have a thorough knowledge of analytic geometry and

elementary functions in addition to college preparatory algebra, geometry, and trigonometry. The topics covered in the Calculus course include most of those covered in a first semester college calculus course: limits, differentiation, and integration of functions with applications.

Computer Math

1 Credit · Grades 11–12 · Prerequisite: Algebra I (or Parts I & II)
The Computer Mathematics course is intended to provide students with experience in using the computer to solve problems which can be set up as mathematical models. Students will apply programming and spreadsheet skills to solve practical problems arising from business, finance, recreation, probability and statistics, and many other fields. Students will be provided opportunities to analyze data in charts, graphs, and tables and to use their knowledge of equations, formulas, and functions to solve problems. Students will develop and refine skills in logic, organization, and precise expression that will enhance learning in all disciplines. Note that students may use this course in conjunction with Algebra I and Geometry to satisfy mathematics graduation requirements only if they also complete a CTE concentration.

Discrete Math

½–1 Credit · Grades 11–12 · Prerequisites: Algebra I (or Parts I & II), Geometry, Algebra II
Discrete Mathematics is a study of contemporary mathematics, including many varied topics such as networks (graphs), counting methods, scheduling, voting theory, logic, fair apportionment, recursion, game theory, and matrices. The course may be taken before, after, or concurrently with Math Analysis. Note that students who are considering any math-related field should not take Discrete Math in lieu of Analysis/Calculus, but may wish to take it in addition to these courses.

Geometry (SOL Test)

1 Credit · Grades 9–12 · Prerequisite: Algebra I (or Parts I & II)
This course is designed for students who have successfully completed the standards for Algebra I. The course includes properties of geometric figures, trigonometric relationships, and methods of justification. A gradual development of formal proof is fostered. Geometry Advanced students will be additionally encouraged to work at a pace and depth designed to prepare them for the academic challenges that lie ahead, a pace requiring a considerable amount of work to be done outside of the classroom, and one that requires discipline and individual responsibility.

Data Science

1 Credit · Grades 10–12 · Prerequisite: Algebra I + One Additional Math Credit (Advanced Studies Diploma: Algebra II Required)
Data science is an introductory course to learning principles associated with analyzing big data. Through the use of open source technology tools, students will identify and explore problems that involve the use of relational database concepts and data-intensive computing to find solutions and make generalizations. Students will engage in a data science problem-solving

structure to interact with large data sets as a means to formulate problems, collect and clean data, visualize data, model using data, and communicate effectively about data formulated solutions.

Math Analysis

1 Credit · Grades 11–12 · Prerequisites: Algebra I (or Parts I & II), Geometry, Algebra II
Math Analysis is a college preparatory course which includes Algebra II topics in depth as well as trigonometry, sequences, probability, and various other topics. The content of this course will serve as appropriate preparation for a calculus course. For instructional grouping purposes, schools may offer Analysis and Analysis Honors.

Math Analysis, Dual Enrollment

1 Credit · Grades 11–12 · Prerequisites: Algebra I (or Parts I & II), Geometry, Algebra II + BRCC Admission + Placement Scores
Math Analysis is a college preparatory course which includes Algebra II topics in depth as well as trigonometry, sequences, probability, and various other topics. The content of this course will serve as appropriate preparation for a calculus course. With a “C” or better, students may receive 6 college pre-calculus credits: MTH 163 and 164.

Statistics and Probability

½–1 Credit · Grades 11–12 · Prerequisites: Algebra I (or Parts I & II), Geometry, Algebra II
In this course, students will learn techniques of gathering, organizing, presenting, and analyzing data. Students will study the mathematics involved in making decisions based on statistics. They will study probability, elementary statistical inference, and simulation. The course may be taken before, after, or concurrently with Math Analysis. Note that students who are considering any math-related field should not take Statistics and Probability in lieu of Analysis/Calculus, but may wish to take it in addition to these courses.

AP Statistics

1 Credit · Grades 11–12 · Prerequisites: Algebra I (or Parts I & II), Geometry, Algebra II, Math Analysis (or Concurrent Enrollment)
The purpose of this course is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: Exploring Data (Describing patterns and departures from patterns); Sampling and Experimentation (Planning and conducting a study); Anticipating Patterns (Exploring random phenomena using probability and simulation); and Statistical Inference (Estimating population parameters and testing hypotheses). Students who successfully complete the course and examination may receive credit and/or advanced placement for a one-semester introductory college statistics course. **Need-based financial assistance is available to take advanced placement exams.

Dual Enrollment Statistics

1 Credit · Grades 11–12 · Prerequisite: DE Math Analysis
This course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, correlation, and linear regression. Students who successfully complete the course receive credit for a one-semester introductory college statistics course.

Science

Alternatives to Animal Dissection
Schools shall provide students with alternatives to animal dissection techniques within each relevant curriculum or course. Alternative dissection techniques may include, but are not limited to, detailed models of animal anatomy and computer simulations. Parents and students will be notified, at the beginning of each school year in the applicable courses, of the option to decline to participate in animal dissection.

Biology I (SOL Test)

1 Credit · Grades 9–12 · Prerequisite or Corequisite: Environmental Science (Required)
Biology I is designed to provide students with a detailed understanding of living systems. Emphasis is placed on the skills necessary to examine alternative scientific explanations, actively conduct controlled experiments, analyze and communicate information, and acquire and use scientific literature. The history of biological thought and the evidence that supports it are explored and provide the foundation of investigating biochemical life processes, cellular organization, mechanisms of inheritance, dynamic relationships among organisms, and the change in organisms through time. The importance of scientific research that validates or challenges ideas is emphasized at this level. For instructional grouping purposes, schools offer. Biology I Advanced which is designed to prepare the student for college science courses in related areas. Ag Biology I Advanced is a class that is taught in conjunction with an agriculture class; a biology teacher and an agriculture teacher work together to apply the Biology I Advanced topics to agriculture.

Biology II – Anatomy & Physiology

1 Credit · Grades 10–12 · Prerequisite: Biology I
Biology II emphasizes human anatomy and physiology, including in- depth studies of all the human systems and their functions. Topics may include dissection of the fetal pig, ecology, genetics and cytology. For instructional grouping purposes, schools may offer Biology II and Biology II Honors.

Biology II – Advanced Survey

1 Credit · Grades 11–12 · Prerequisite: Biology I
This course will cover several Biology I topics more in depth and focus on contemporary issues. Topics may include DNA technology, disease transmission, genetics, evolution, forensic science, environmental science, food safety, genetically modified foods, and local flora and fauna. This course will incorporate technology and its uses. Activities, labs, and field trips will be used. The Honors Level will focus on Biotechnology with an emphasis on Ag Biotechnology, or zoology.

Biology II – Advanced Survey, Dual Enrollment

1 Credit · Grades 11–12 · Prerequisite: Biology I
This course will cover several Biology I topics more in depth and focus on contemporary issues. Topics may include DNA technology, disease transmission, genetics, evolution, forensic science, environmental science, food safety, genetically modified foods, and local flora and fauna. This course will incorporate technology and its uses. Activities, labs, and field trips will be used. The Honors Level will focus on Biotechnology with an emphasis on Ag Biotechnology, or zoology. With a “C” or better, students may receive four (4) college credits: BIO 101

AP Biology

1 Credit · Grades 11–12 · Prerequisites: Biology I and Chemistry I
Advanced Placement Biology is the equivalent of an introductory Biology course in college. The survey course includes the study of sub-cellular parts and cell processes, the chemistry of life, genetics, evolution, and both form and function in example organisms of all 5 kingdoms of living things. Students may take the Advanced Placement exam and have their scores considered for college credit. **Need-based financial assistance is available to take advanced placement exams.

Chemistry I (SOL Test)

1 Credit · Grades 10–12 · Prerequisite: Algebra I
Chemistry I is designed to provide students with a detailed understanding of the interaction of matter and energy. This interaction is investigated through the use of laboratory techniques, manipulation of chemical quantities, and problem-solving applications. Scientific methodology is employed in the experimental and analytical investigations, and concepts are illustrated with practical applications. Technology including graphing calculators and computers will be employed where feasible. Students will understand and use safety precautions with chemicals and equipment. Chemistry emphasizes qualitative and quantitative study of substances and the changes that occur in them. Students will be encouraged to share their ideas, use the language of chemistry, discuss problem-solving techniques, and communicate effectively. For instructional grouping purposes, schools may offer Chemistry I and Chemistry I Honors.

Chemistry I, Dual Enrollment

1 Credit · Grades 10–12 · Prerequisite: Algebra II
Chemistry I is designed to provide students with a detailed understanding of the interaction of matter and energy. This interaction is investigated through the use of laboratory techniques, manipulation of chemical quantities, and problem-solving applications. Scientific methodology is employed in the experimental and analytical investigations, and concepts are illustrated with practical applications. Technology including graphing calculators and computers will be employed where feasible. Students will understand and use safety precautions with chemicals and equipment. Chemistry emphasizes qualitative and quantitative study of substances and the changes that occur in them. Students will be encouraged to share their ideas, use the language of chemistry, discuss problem-solving techniques, and communicate effectively. For instructional grouping purposes, schools may offer Chemistry I and Chemistry I Honors.

Chemistry II

1 Credit · Grades 11–12 · Prerequisite: Chemistry I
Chemistry II offers more in-depth study of topics from Chemistry I. Analytical procedures such as qualitative analysis, quantitative analysis and chromatography may be emphasized. Major topics may include electrochemistry, heat and energy, nuclear and organic reactions, atomic structure, chemical bonding, stoichiometry, gas laws, colligative properties of matter, chemical equilibrium metallurgy and redox. All Chemistry II students will complete a STEM Capstone project.

AP Chemistry

1 Credit · Grades 11–12 · Prerequisite: Chemistry I
To develop the requisite intellectual and laboratory skills, AP Chemistry students need adequate classroom and laboratory time. It is expected that a minimum of 290 minutes per week will be allotted for an AP Chemistry course. Of that time, a minimum of 90 minutes per week, preferably in one session, should be spent in the lab. (Time devoted to class and laboratory demonstrations should not be counted as part of the laboratory period.) In addition, students will probably need to spend at least five hours a week studying outside of class. **Need-based financial assistance is available to take advanced placement exams. The AP Chemistry course provides students with a college-level foundation to support future advanced coursework in chemistry. Students cultivate their understanding of chemistry through inquiry-based investigations, as they explore topics such as: atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics, and equilibrium.

Earth Science I (SOL Test)

1 Credit · Grades 10–12 · No Prerequisite
Earth Science I is the study of the Earth’s composition, structure, processes and history; its atmosphere, fresh water, and oceans; and its environment in space. It emphasizes historical contributions in the development of scientific thought about Earth and space. Earth Science stresses the interpretation of maps, charts, tables, and profiles; the use of technology to collect, analyze and report data; and science skills in systematic investigation. Problem solving and

decision making are integral parts of the course, especially as they relate to the costs and benefits of utilizing the Earth's resources. Major topics of study include plate tectonics, the rock cycle, Earth history, the oceans, the atmosphere, weather and climate, and the solar system and universe.

Earth Science II — Astronomy

1 Credit · Grades 10–12 · Prerequisite: Earth Science I or Environmental Science
Astronomy is a course designed for the promotion of greater understanding of the universe through the development of observational techniques and demonstrations in the physical sciences. Emphasis will be on astronomical history and the fundamental laws which have led to presently accepted theories of the universe. Some topics to be studied include a survey of the star field, constellations, the seasons, the moon, the linking of the sky and earth, and history of the space program.

Earth Science II — Geology

1 Credit · Grades 10–12 · Prerequisite: Earth Science I or Environmental Science
This course focuses on dynamic Earth, the materials of which it is made, and the processes by which it is constantly changing. Topics include the formation of minerals and rocks, plate tectonics, and Earth history and fossils. Practical applications in structural geology, hydrology, and soil science are explored with emphasis on local applications whenever possible.

Earth Science II — Oceanography

1 Credit · Grades 10–12 · No Prerequisite (Recommended: Earth Science I)
In Oceanography, students will take a journey through the ocean realm. Oceanography applies the sciences of geology, biology, chemistry, and physics to Earth's oceans. The course also examines engineering for the development of devices that allow scientists to explore underwater depths.

Environmental Science

1 Credit · Grade 9 · No Prerequisite
Environmental Science integrates the study of numerous components of our environment, including the human impact on our planet. The focus is on scientific inquiry, the physical world, the living environment, resource conservation, humans' impact on the environment, and legal and civic responsibility. Students will collect data and analyze it through laboratory experiences and field work. Students will collaborate with the community (museums, nature centers, government agencies, associations, foundations, and private industry) to provide diverse points of view about the management of natural resources, and offer a variety of learning experiences and career education opportunities. Counts as either a biology or earth science credit.

AP Environmental Science

1 Credit · Grades 11–12 · No Prerequisite (Biology Recommended)
The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human- made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them. Environmental science is interdisciplinary; it embraces a wide variety of topics from different areas of study. Yet there are several major unifying constructs, or themes, that cut across the many topics included in the study of environmental science. **Need-based financial assistance is available to take advanced placement exams.

Physics I

1 Credit · Grades 10–12 · Prerequisite: Algebra I
Physics I emphasizes a complex understanding of experimentation, the analysis of data, and the use of reasoning and logic to evaluate evidence. The use of mathematics, including algebra, inferential statistics, and trigonometry, is important, but conceptual understanding of physical systems remains a primary concern. Students build on basic physical science principles by exploring in depth the nature and characteristics of energy and its dynamic interaction with matter. Key areas covered include force and motion, kinetic molecular theory, energy transformation, wave phenomena and the electromagnetic spectrum, light, electricity, fields and non- Newtonian physics. The course stresses the practical application of physics in other areas of science and technology and how physics affects our world. For instructional grouping purposes, schools may offer Physics I and Physics I Honors. Physics I Honors students are expected to complete a STEM capstone project.

AP Physics

1 Credit · Grades 11–12 · Prerequisite: Algebra II
This course provides a systematic introduction to the main principles of physics and emphasizes the development of conceptual understanding and problem-solving ability using algebra and trigonometry, but rarely calculus. In most colleges, this is a one-year terminal course including a laboratory component and is not the usual preparation for more advanced physics and engineering courses. However, the B course provides a foundation in physics for students in the life sciences, pre-medicine, and some applied sciences, as well as other fields not directly related to science. Students explore principles of Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. The course is based on six Big Ideas, which encompass core scientific principles, theories, and processes that cut across the traditional boundaries and provide a broad way of thinking about the physical world.

Research and Inquiries into Science (R&IS) (Elective)

½–1 Credit · Grades 10–12 · No Prerequisite
Students develop an attitude of inquiry as they complete a project of their own choice in categories of Science determined by various regional and international guidelines. Students

follow the Scientific method and experience the problem solving process. They use the library, design an experiment, keep careful records, work with mentors from industry or colleges and prepare an oral presentation to accompany their visual display. Projects may include the use of graphics, invention of prototypes, computers or photographs. For instructional grouping purposes, school may offer R&IS and R&IS Honors.

Social Studies

Current Events (Elective)

½–1 Credit · Grades 10–12 · No Prerequisite
Current Affairs is an elective course designed to address current issues at a local, national, and global level. Students will investigate and think critically about current topics and discover the impact that these issues have on their everyday lives. Students will develop skills in debate, primary and secondary source analysis, and research. Students will also be challenged to collaborate with peers, experience simulations and debates, and have the opportunity to create projects and presentations. Current Affairs has year-long, full credit and semester-long, half-credit version. This elective course is open to students in grades 10-12.

Debate (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Debate is designed to prepare students for college-level writing and future professional activities by providing them with the necessary skills for constructing, researching, organizing, crafting, and delivering arguments. Students will demonstrate knowledge of the procedures used in various forms of debate, discover, and utilize significant philosophical ideologies as a basis of debate, and operate effectively in teams to prepare for and participate in Public Forum, Lincoln-Douglas, and Parliamentary forms of debate. Students will listen and critique the arguments of others - both in competition and in-class peer evaluation. Debate is an elective course open to students in grades 9-12 that may be repeated.

AP Modern World History

1 Credit · Grades 10–12 · Recommended Prerequisite: World History II
AP World History: Modern is an introductory college-level modern world history course. Students cultivate their understanding of world history from 1200 CE to the present through analyzing historical sources and learning to make connections and craft historical arguments as they explore concepts like humans and the environment, cultural developments and interactions, governance, economic systems, social interactions and organization, and technology and innovation. This course is intended to be an AP version of 10th grade World History II, but it is open to 10-12 grade students.

African American History (Elective)

1 Credit · Grades 9–12 · No Prerequisite
This course will survey African American history from precolonial Africa through the present. Students will be introduced to key concepts in African American history from early beginnings in indigenous Africa through the transatlantic slave trade, the Civil War, Emancipation, Reconstruction, the Civil Rights era and into the present. The course, offered in a variety of learning models, will give students an opportunity to explore social events and processes, individuals and agency, documents and institutions; and analyze past and present positions for future implications for African Americans. This course also gives students the opportunity to complete a Capstone project related to a topic of their choice. Students will pursue independent research relative to the content on a question or problem of their choice and produce a learning object that reflects a deeper understanding of African American history. (Updated September, 2020)

Historical Research and Inquiry (Farmville Tour Guides)

1 Credit · Grades 10–12 · Application Required
The “Farmville Tour Guides” project is an honors-level independent study that challenges student groups to research a select chapter of the civil rights history of Farmville, Virginia in preparation for a student-led field trip during the spring semester. Farmville was the site of a 1951 student strike in protest of unequal educational facilities that later evolved into a class-action lawsuit that went before the Supreme Court in 1954 as Brown v. the Board of Education. Students will conduct in-depth research and then present this information at a related historic site during a “student-led” tour of Farmville during the spring semester. Students will hone skills in research, group collaboration, leadership, and public speaking. Participants will also be required to attend five after school class meetings at the Central Office building for Rockingham County Public Schools. Interested students from grades 10-12 are invited to apply during the fall semester. Each high school is guaranteed at least one group that will be selected on the strength of the student applications. Please refer to the project website for more information: http://farmvilletourguides.rockingham.k12.va.us.

Historical Research and Inquiry (Local History)

1 Credit · Grades 11–12 · No Prerequisite
This honors-level course is designed as an independent study that allows students to research a select chapter of local history. Students will have the opportunity to work at The Heritage Museum of the Harrisonburg-Rockingham Historical Society (HRHS) in order to conduct a portion of their research. Students will be expected to utilize primary as well as secondary sources in order to develop a six-page research paper that includes a thesis statement that addresses the historical significance of their topic. This research will then be used to create a multimedia exhibit that will be featured in The Heritage Museum.

AP Human Geography

1 Credit · Grades 10–12 · Recommended Prerequisite: World Geography
AP Human Geography is an elective AP course designed to be the equivalent of a college-level

Human Geography course. Students analyze the spatial relationships and connectivity of the world through various topics that range from demographics and migration to urban planning and international trade. Students will develop the skills necessary to be global citizens in the 21st Century. In addition to using GIS and GPS, students learn to analyze data distributed by various international organizations. Beyond daily reading and note-taking, students learn to clearly communicate through regular written responses to situations and problems across the globe. This is an excellent introductory course for students who have not previously taken AP courses, and it can be taken in 10th, 11th, or 12th grade. This course is designed to prepare students to take the Advanced Placement test in May. Students may earn college credit through their performance on this assessment.

Historical Methods (Elective) ERHS: Shenandoah National Park: A Shared History

½ Credit · Grades 10–12 · No Prerequisite
A Shared History is a semester-long elective course that provides students a comprehensive historical overview of the creation of Shenandoah National Park. Students will examine the complex and bittersweet story that is embedded into the fabric of our local history through the use of primary resources, oral histories, online databases, and local field trips. By examining this story in its historical context, students will evaluate the social, economic, and political perspectives of all who were impacted by the establishment of the Park. Students will fully understand the sacrifices made by the local Blue Ridge Mountain communities who were displaced, as well as the role of future generations in preserving this shared history. This course is open to students in grades 10-12 at East Rockingham High School.

Historical Methods (Elective) TAHS: Street Law

½ Credit · Grades 10–12 · No Prerequisite
Street Law is a one-semester elective intended to give students an overview of American law and the U.S. legal system. This course is designed to provide students with an understanding of how laws affect their everyday lives, providing a survey of various topics such as the lawmaking process, the criminal justice system, the judicial system, constitutional law, and the legal rights and obligations of citizens. The course is not intended to provide vocational training for a career in any specific law-related field, although students interested in such professions will have the opportunity for career exploration. Students will engage in case studies, written and oral debate, and interviews will law enforcement officers and legal professionals. This elective course is open to students in grades 10-12 at Turner Ashby High School.

Law Studies (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Law Studies is based on the textbook curriculum by McGraw-Hill called, “Street Law: A Course in Practical Law.” The course includes units such as Criminal Law, Civil Law and Torts, and Constitutional Law. The course will provide students with an understanding of how the legal system impacts their daily lives.

Modern American History (Elective)

½ Credit · Grades 10–12 · No Prerequisite
Modern American History is a one semester elective that involves the study of America's social, political, and economic history from the mid-twentieth century to the present-day. Topics include the Korean War, the Cold War, the 1960s, the Vietnam War, New Feminism, Watergate, the fall of the Soviet Union, the September 11th attacks, and various political developments of the 21st century. Students will develop skills in critical thinking, collaborative projects, class debate, and public speaking. This semester-long elective course is available to 10th-12th grade students.

Psychology (Elective)

½ Credit · Grades 10–12 · No Prerequisite
Psychology is a one semester elective course that helps students understand human behavior. Students will learn about the history of psychology, notable psychologists, and theories and important terminology used in the field of psychology. Units include the relationship between biology and psychology, sensation and perception, states of consciousness, and various psychological disorders. Emphasis is placed on research, projects, group collaboration, and discussion. Psychology is an elective course for students in grades 10-12.

Psychology, Dual Enrollment

1 Credit · Grades 11–12 · No Prerequisite
This course introduces students to the systematic and scientific study of human behavior and mental processes. Students will explore major psychological concepts, principles, and theories across the field's primary subfields, including biological, cognitive, developmental, and social psychology. Emphasis is placed on understanding the research methods and ethical considerations that guide psychological inquiry. Students will develop skills in critical thinking, analysis, and application as they investigate how psychological science explains human thought and behavior. Students earning a grade of "C" or higher may receive three (3) college credits for PSY 200.

AP Psychology (Elective)

1 Credit · Grades 11–12 · Recommended: Advanced Biology & Statistics
AP Psychology is designed to introduce students to the systematic and scientific study of human behavior. Students will explore the psychological concepts, principles, and phenomena associated with each of the major subfields of psychology, as well as the ethics and methods psychologists use in their science and practice. AP Psychology is an elective course intended for students in grades 11 and 12. While not mandatory, it is suggested that students either enroll in or complete Advanced Biology and Statistics prior to or in conjunction with AP Psychology. This course is designed to prepare students to take the Advanced Placement test in May. Students may earn college credit through their performance on this assessment.

Sociology (Elective)

½ Credit · Grades 10–12 · No Prerequisite
Sociology is a one semester elective course that introduces students to major concepts in the field of sociology. Understanding the structure and components of society helps students gain a better realization of why groups of people behave the way they do. Research, discussion, and debates of current and controversial issues in society will be a major part of the course. These subjects will be discussed respectfully within the parameters of non-biased research. Sociology is an elective course for students in the grades 10-12.

Sociology, Dual Enrollment

1 Credit · Grades 11–12 · No Prerequisite
This course provides an introduction to the fundamental concepts, theories, and methods used in the study of sociology. Students will explore how societies are structured and how social institutions, culture, and group dynamics influence individual and collective behavior. Emphasis is placed on developing critical thinking skills through research, discussion, and respectful debate of current and controversial social issues. Topics are examined using non-biased, evidence-based inquiry. Students earning a grade of “C” or higher may receive three (3) college credits for SOC 200.

United States Government

1 Credit · Grades 11–12 · No Prerequisite
Virginia/U.S. Government is designed to give students an overview of national, state, and local government, as well as the role that individual citizens play at each level. Students will explore the Constitution, political parties, the three branches of government, civil liberties, and civil rights. Students will develop skills in communication, collaboration, critical thinking, and creativity in order to become responsible citizens of society. VA/U.S. Government is a required course for all 12th grade students. Standard, Honors, and AP versions of this course are available.

Honors U.S. Government

1 Credit · Grades 11–12 · No Prerequisite
The honors-level of Virginia/U.S. Government is designed to give students an overview of national, state, and local government, as well as the role that individual citizens can play at each level. Students will explore the Constitution, political parties, the three branches of government, civil liberties, and civil rights. Students will develop skills in communication, collaboration, critical thinking, and creativity in order to become responsible citizens of society. Students taking this honors-level class will be expected to defend various positions through writing, discussion, and debate. VA/U.S. Government is a required course for all 12th grade students. Standard, Honors, and AP versions of this course are available.

AP Government and Politics: United States

1 Credit · Grade 12 · No Prerequisite (Honors Gov Recommended)
AP Government and Politics is designed to be the equivalent of a college-level political science course. The course includes both the study of general concepts used to interpret U.S. politics, and the analysis of specific case studies, theoretical perspectives, and explanations for various political behaviors and outcomes. Five major themes illustrate the distinct features and processes involved in U.S. government and the study of political behavior: Constitutionalism; Liberty and Order; Civic Participation in a Representative Democracy; and Methods of Political Analysis. The course is designed to prepare students to take the Advanced Placement test in May. Students may earn college credit through their performance on this assessment. VA/U.S. Government is a required course for all 12th grade students.

U.S. Government, Dual Enrollment

1 Credit · Grade 12
This course offers a comprehensive introduction to the American political system at the national, state, and local levels. Students will study the U.S. Constitution, the structure and functions of government, political behavior, public policy, and the rights and responsibilities of citizens. Emphasis is placed on civic participation and the influence individuals have in shaping government at every level. Through research, writing, discussion, and debate, students will analyze and defend positions on major political and constitutional issues while strengthening skills in critical thinking, communication, and collaboration. In addition to earning college credit for PLS 135, students must complete a State and Local Government module through Edgenuity. This module, graded on a pass/fail basis, fulfills the Virginia state and local government requirement for high school graduation. Students earning a grade of “C” or higher may receive three (3) college credits for PLS 135.

United States and Virginia History (SOL Test)

1 Credit · Grade 11 · No Prerequisite
This survey course will explore American history from the Age of Discovery to the present. Students will examine central themes such as state vs. national authority, the role of government, and the evolution of civil rights and race relations. Students will develop skills in writing and critical thinking through primary resource analysis and various research projects. VA/US History is a required course for all 11th grade students. Standard, Honors, AP, and DE versions of this course are available. Only students who require a verified credit in Social Studies will take the end-of-course SOL test.

Honors United States and Virginia History (SOL Test)

1 Credit · Grade 11 · No Prerequisite
This survey course will explore American history from the Age of Discovery to the present. Students will examine central themes such as state vs. national authority, the role of government, and the evolution of civil rights and race relations. Students will develop skills in writing and critical thinking through primary resource analysis and various research projects. The honors version of this course will place a higher emphasis on reading and writing, as well

as a greater depth of content and understanding. VA/US History is a required course for all 11th grade students. Standard, Honors, AP, and DE versions of this course are available. Only students who require a verified credit in Social Studies will take the end-of-course SOL test.

AP U.S. History (SOL Test)

1 Credit · Grade 11 · No Prerequisite (Honors US History Recommended)
AP US History is designed to be the equivalent of a two-semester college-level course in U.S. History. Students will explore significant events, individuals, and developments from the Age of Discovery to the present. Students will develop skills in analyzing primary and secondary sources, developing historical arguments, and making connections across time and place. The course is designed to prepare students to take the Advanced Placement test in May.

Students may earn college credit through their performance on this assessment. VA/US History is a required course for all 11th grade students. Standard, Honors, AP, and DE versions of this course are available. Only students who require a verified credit in Social Studies will take the end-of-course SOL test.

United States and Virginia History, Dual Enrollment (SOL Test)

1 Credit · Grade 11
This course includes European exploration, development of the American colonies and their institutions, the Revolution, major political, social and economic developments, geographical expansion, the Civil War and Reconstruction, overseas expansion, the two world wars, the Cold War and the post-Cold War era. The design and structure of this course will encourage critical thinking, structured academic discussions, writing skills, and project-based learning. VA/US History is a required course for all 11th grade students. Standard, Honors, AP, and DE versions of this course are available. Only students who require a verified credit in Social Studies will take the end-of-course SOL test.

World Geography (SOL Test)

1 Credit · Grade 9 · No Prerequisite
World Geography provides students with an understanding of the people, places, and regions of the world. Particular emphasis is placed on cultural interactions within a world that is increasingly connected and interdependent. Students will explore how humans impact the world around them, as well as how environmental factors affect human behavior. Students will develop skills in interpreting and analyzing various spatial relationships. World Geography is a required course for all 9th graders. All students will take the end-of-course SOL test in an attempt to earn their verified credit in Social Studies.

World History I to 1500 A.D. (Elective with SOL)

1 Credit · Grades 9–12 · No Prerequisite
This course explores the historical development of people, places and patterns of life from ancient times to 1500 A.D. and its impact on Western civilization. While knowledge of dates,

names, places, events, and ideas is an integral part of this course, historical understanding and critical thinking are the ultimate educational goals. Students draw upon chronological thinking, historical comprehension, historical analysis and interpretation, and historical research.

World History II: 1500 A.D. – Present (SOL Test)

1 Credit · Grade 10 · Prerequisite: World History I Recommended
World History II explores notable events, people, and places from 1500 A.D. (C.E.) to the present. A large portion of this course examines the transformation of European monarchies and world empires into nation-states and emerging democracies. The second half of the curriculum explores the impact of these developments around the globe with emphasis on pivotal global events such as the World Wars, the Great Depression, the Cold War, and colonial independence. Students will develop skills in analytical writing, collaborative projects, class debate, and public speaking. This course is intended for 10th grade students. Those who require a verified credit in social studies will take the World History II end-of course SOL test.

Philosophy (Dual Enrollment)

1 Credit · Grades 11–12
This course introduces students to major questions in philosophy and the methods used to explore them. Topics may include the nature of knowledge, reality, mind, and morality, as well as debates about freedom, justice, and the meaning of life. Students will read selections from both classical and contemporary philosophers, develop skills in critical analysis and argumentation, and consider how philosophical ideas connect to everyday life and current issues. With a “C” or better, students may receive three (3) college credits: PHI 220

Fine Arts

Visual Arts

Art I / Art Foundations (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Art Foundations I is a full year introduction to artists, art media, and studio techniques; a hands-on studio course including art history, art appreciation and understanding art as a visual language. Students will have opportunities to exhibit their work. Art Foundations I is a prerequisite for all other art courses.

Art II / Intermediate (Elective)

1 Credit · Grades 10–12 · Prerequisite: Art I
Art II is designed to expand upon the skills learned in Art Foundations I. Artists, art history, media, and techniques are studied with students exhibiting their work. Second year students are expected to be highly motivated and able to work independently.

Art III / Advanced Intermediate (Elective)

1 Credit · Grades 11–12 · Prerequisites: Art I & II
This course is designed for students who have a very high interest in the arts, are self-motivated, and have considerable skill. Emphasis is placed on visual problem-solving, creative growth, personal expression and increased aesthetic knowledge.

Art IV / Advanced (Elective)

1 Credit · Grade 12 · Prerequisites: Art I, II, & III
Emphasis is placed on independent problem-solving and the production of a portfolio for professional presentation and scholarship competition.

AP Art History (Elective)

1 Credit · Grades 11–12 · Prerequisites: Art I & II
This course emphasizes critical thinking and prepares students for the Advanced Placement Exam. The student will develop an understanding and knowledge of diverse historical and cultural contexts of architecture, sculpture, painting, and other media. The student will examine and critically analyze major forms of artistic expression from the past and the present from a variety of cultures. The course emphasizes understanding works of art within their historical context by examining issues such as politics, class, religion, patronage, audience, gender, function, and ethnicity. **Need-based financial assistance is available to take advanced placement exams.

Art History, Dual Enrollment (Elective)

1 Credit · Grades 11–12 · Prerequisites: Art I & II
This course emphasizes critical thinking and prepares students for the Advanced Placement Exam. The student will develop an understanding and knowledge of diverse historical and cultural contexts of architecture, sculpture, painting, and other media. The student will examine and critically analyze major forms of artistic expression from the past and the present from a variety of cultures. The course emphasizes understanding works of art within their historical context by examining issues such as politics, class, religion, patronage, audience, gender, function, and ethnicity. **The course is tuition free for students. There may be additional text or supply fees for families. Students who receive a “C” or higher may earn three (3) college credits for ART 101.

Craft Design (Elective)

1 Credit · Grades 10–12 · Prerequisite: Art I or Instructor Approval
Craft Design is an introduction to crafts from around the world and includes art history, art appreciation, and the study of various cultures. This class is designed for the serious student. Materials include wood, clay, paper, metal, glass, and fibers.

Advanced Craft Design (Elective)

1 Credit · Grades 11–12 · Prerequisites: Art I & Craft Design
Advanced Craft Design is designed to expand upon the skills learned in Craft Design. Artists, art history, media, and techniques are studied with students exhibiting their work. Second year students are expected to be highly motivated and able to work independently.

Digital Art & Design (Elective)

1 Credit · Grades 10–12 · Prerequisite: Art I
This course is designed for students who are interested in creating art from a digital perspective and/or have an interest in Graphic Design. Students will utilize digital media programs such as Photoshop, Illustrator, editing software, photography, and photo-editing programs to create art and media.

Portfolio Courses: AP Studio Art (2-D Design, 3-D Design, Drawing)

1 Credit · Grades 11–12 · Prerequisites: Art I & II
This course is designed for the student who is seriously interested in the art experience and is taught as a college level course. The student will submit a three-part portfolio for evaluation at completion of the class. AP Studio goals are: encourage creative and systematic investigation of formal and conceptual issues; emphasize art making as an ongoing process that involves the student in informed and critical decision making; development of technical skills and understanding of art vocabulary; independent thinking and inventive contribution to culture through production of art. **Need-based financial assistance is available to take advanced placement exams.

Choral Ensembles

In the choral classroom, students explore the art of music through dialogue and first-hand experience. Students are provided with techniques for individual vocal growth and develop a sense of community as ensemble members learn and share their talents together. All choral standards of learning are covered; all students are expected to demonstrate understanding and mastery. Students come to the choral classroom with different skill sets when they arrive, however, perseverance will lead to success. Through choral music, students will work towards mastery in artistry, performing, tonal awareness, individual independence, understanding, expression, reading, responding, writing, listening, purposeful articulation, meaningful inflection,

confidence, context, body awareness, communication, acceptance, connection, citizenship, responsibility, caring, sharing, respect, and fairness.

Auditioned Choirs

Small Vocal Ensemble (Elective)

1 Credit Grades 10-12, Prerequisite: Audition
BHS: Early Bird Choir, ERHS: Chamber Choir; SHS: A Capella Choir; TAHS: Chamber Singers

The class is open to students who successfully complete an audition that demonstrates sight singing, aural skills, and/or a prepared piece. This choir sings all styles of music that are medium to advanced difficulty. This small group of singers will perform in numerous concerts throughout the year. Performance commitments may include weekdays and weekends, during and after school hours. Additionally, this group represents our school in county, district, and state events.

Intermediate Level Chorus (Elective)

1 Credit Grades 9-12, Prerequisite: Audition
BHS: Mixed Chorale; ERHS: Totum Voces; SHS: Peak Harmony (treble choir, morning class); TAHS: Mixed Chorale

The class is open to students who successfully complete an audition that demonstrates sight singing, aural skills, and/or a prepared piece. This group will perform in numerous concerts throughout the year. Performance commitments may include weekdays and weekends, during and after school hours. Additionally, this group represents our school in county, district, and state events.

Advanced Chorus (Elective)

1 Credit Grades 9-12, Prerequisite: Audition
BHS: Honors Choir; ERHS: Bella Voces; SHS: Blazin’ Blues; TAHS: TA Singers

Open to the student who successfully completes an audition of sight singing, performance, vocal warm-ups, and scholarship. This choir sings in all musical styles at medium to difficult levels. This group will perform in numerous concerts throughout the year. Performance commitments may include weekdays and weekends, during and after school hours. Additionally, this group represents our school in county, district, and state events.

Non-Auditioned Choirs

Beginning Chorus (Elective)

1 Credit Grades 9-12
Beginning, Intermediate, and Advanced Singers
BHS: Concert Choir; ERHS: Novas Voces; SHS: Spotswood Singers; TAHS: Concert Choir

The choir will sing all styles of music that vary in difficulty according to the ability of the current group. Students will perform in several concerts throughout the year. Concentration in musicianship, sight-singing, and vocal technique.

General Music

Piano (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Piano is open to anyone interested in learning the concepts and fundamentals needed to perform on the piano. Students will increase their musical understanding by learning a vocabulary of chords, key signatures, and accompaniment patterns. Instruction will also focus on developing good practice habits and techniques needed to increase muscular agility and hand flexibility. Pianos are provided by the school and students will have the opportunity to play some of the standards of piano repertoire. Throughout the course, students will also learn how music is constructed and discover the composers and history behind music.

Advanced Piano (Elective)

1 Credit · Grades 10–12 · Prerequisite: Piano I
Continue building musicianship and skills developed in Piano I.

Guitar (Elective)

1 Credit · Grades 9–12 · No Prerequisite
This class is open to anyone interested in learning how to play the acoustic guitar. The class starts from the very basics and goes through various accompanying styles, all kinds of chords, including bar chords, beginning theory, etc. Guitars are provided by the school, but students may want to purchase their own in order to practice outside of class. A second year of Guitar may also be offered to students successfully completing their first year of Guitar.

Advanced Guitar (Elective)

1 Credit · Grades 10–12 · Prerequisite: Guitar I
Continue building musicianship and skills developed in Guitar I.

Music Appreciation, History, Theory (Elective)

1 Credit · Grades 9–12 · No Prerequisite
This class is available to anyone wishing to learn the basics through more advanced concepts of music theory and history. Emphasis will be on the study of music theory, as it pertains to composition and arranging of instrumental and choral music. This will include the study of intervals, scales, chords, modulations, and forms.

Music Technology (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Students will learn all aspects of recording from practice to production. Software such as GarageBand and Studio One will be used to create, edit, and master both cover and original songs. Projects are the main focus guiding students through practice, recording, editing and mastering techniques. The class will draw upon the unique skills of the students enrolled. The teacher may elect to invite guests related to the content and may take field trips to local studios/venues. Musicians and interested audio software operators are welcome.

AP Music Theory

1 Credit · Grades 11–12 (Grade 10 with Teacher Approval) · Prerequisite: Music Background Recommended
In this course, the students will develop higher-level music literacy through notation, aural skills, and advanced analysis techniques. Students are required to read, notate, write, sing, and listen to music. The student will listen to musical works attentively and analytically, developing musical memory and the ability to articulate responses to formal, stylistic and aesthetic qualities of the works. Performance, using singing, keyboard, and the student's primary performance media is also a part of the learning process. **Need-based financial assistance is available to take advanced placement exams.

Instrumental Ensembles

The basic philosophy of the band department is learning the fundamentals of music and receiving a greater understanding and appreciation of music through performance. The band is both curricular and extracurricular. The band meets during the school day for credit, and each member is to attend all activities outside the school day as required by the director. These could include, but are not limited to, marching band, pep band, parades, summer band, sectionals, concert and small group rehearsals.

Introduction to Band (Elective)

1 Credit Grades: 9-12
BHS: Beginning Band; **ERHS:** Beginning Band; **SHS:** Beginning Band; **TAHS:** Beginning Band

This class offers students the chance to start in band at the high school level. Additional out-of-class and after-school performances may be required. No previous experience is required.

Intermediate Band (Elective)

1 Credit Grades: 9-12, Prerequisite: One year of previous class band experience or approval of director
BHS: Concert Band; **ERHS:** Concert Band; **SHS:** Concert Band; **TAHS:**Concert Band

The intermediate band class is open to all students who have successfully passed eighth grade band or have auditioned and been approved by the director. The intermediate band will perform at out-of-class regional festivals and local concerts as indicated by the director. Additional out-of-class rehearsals and performances will be required. Check with your director for detailed information.

Advanced Band (Elective)

1 Credit Grades: 9-12, Prerequisite: Audition and approval of director
BHS: Wind Ensemble; ERHS: Symphonic Band; SHS: Symphonic Band; TAHS: Wind Ensemble

The advanced band class requires the student to demonstrate a high level of proficiency on their band instrument. The advanced band performs at out-of-class regional festivals and local concerts as indicated by the director. Auditions for this class will be held in the spring, dates and times will be posted by the director. Additional out-of-class rehearsals and performances will be required. Check with your director for detailed information.

Small Group Ensemble I – Advanced Jazz Ensemble (Elective)

1 Credit Grades: 9-12, Prerequisite: Audition and approval of the director
This band class consists of the most advanced musicians. It performs music from many jazz styles, including blues, swing, Latin, bebop, and funk. Instrumentation will be limited, and director's approval will be required for enrollment. Selection to this class, will be based on

proficiency on a jazz instrument. Students will perform at several extracurricular events and concerts throughout the year. Additional requirements may apply. Check with your director.

Small Group Ensemble II – Percussion (Elective)

1 Credit Grades: 9-12, Prerequisite: Audition and approval of director
This class consists of limited instrumentation established by the director. The ensemble will perform at local concerts and festivals. Additional out-of-school rehearsals and performances will be required.

Small Group Ensemble II – Advanced Percussion (Elective)

1 Credit Grades: 10-12, Prerequisite: Audition and approval of director
This class consists of limited instrumentation established by the director. The ensemble will perform at local concerts and festivals. Additional out-of-school rehearsals and performances will be required.

Theatre Arts

Theatre I (Elective)

1 Credit · Grades 9–12 · No Prerequisite
This course will focus on basic acting skills (actor motivation, characterization, pantomime, and concentration), public speaking, introductory technical theater and dramatic performance.

Theatre II (Elective)

1 Credit · Grades 10–12 · Prerequisite: Theatre I or Instructor Approval
In this course, students will build on what they learned in Theatre I – including intermediate acting skills, developed scene work, dramatic interpretation, improvisation techniques directing, and elements of technical theatre. Students will work collaboratively to explore the process of Theatre and develop polished pieces. .

Theatre III (Elective)

1 Credit · Grades 11–12 · Prerequisite: Theatre II or Instructor Approval
This course is an intensive acting/production class for students who wish to fine-tune their acting skills and their stagecraft skills. Students will learn advanced acting skills and prepare several monologues for performances and auditions. Students will also view live theatre performances once each nine weeks, and produce works of theatre for public performance.

Theatre IV (Elective)

1 Credit · Grade 12 · Prerequisite: Theatre III or Instructor Approval
In this course students will learn advanced acting skills, period acting, improvisation techniques, stage movement, and audience participatory theatre. Students will be required to view live theatre performances once each nine weeks, and produce works of theatre for public performance. Performances will vary from school to school, and may include (but not be limited to) one-act play and festival competition.

Technical Theatre (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Students will learn the basics of Theatre production for live stage and Musical performances including stagecraft, light/sound design, costume and make-up design, and theatre management.

Technical Theatre II (Elective)

1 Credit · Grades 10–12 · Prerequisite: Technical Theatre I
Students will build upon the basics of Theatre publication for live stage and Musical performances including stagecraft, light/sound design, costume and make-up design, and theatre management.

Musical Theatre (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Students study musical theatre and its history from inception to present day and the various dramatic, music, technical, and production aspects that go into creating musical theatre. Students will analyze, create, and produce pieces of musical theatre, as well as study singing, acting, and dance elements of the musical theatre stage. The students will articulate an understanding of the collaborative effort needed to put on musical theatre

World Languages

French I (Elective)

1 Credit · Grades 9–12 · No Prerequisite
French I introduces the student to the basic communication skills, which incorporate listening, speaking, reading and writing. A variety of common discussion topics as well as an introduction to cultures in the French-speaking world are studied. Emphasis is on basic communication in real life situations.

French II (Elective)

1 Credit · Grades 9–12 · Prerequisite: French I
French II reviews and further explores various topics. Students progress toward proficiency in reading, writing, speaking and listening. Communication and culture remain the primary emphasis.

French III (Elective)

1 Credit · Grades 10–12 · Prerequisite: French II
French III continues to develop proficiency of the target language based on various topics. Reading, writing, listening and speaking are still integrated into the course. Dual Enrollment opportunities may be available.

French IV Honors Level (Elective)

1 Credit · Grades 11–12 · Prerequisite: French III
French IV continues the development of language proficiency with emphasis on more complex linguistic skills and in-depth cultural studies. The target language is used almost exclusively. For instructional grouping purposes, schools may offer French IV and French IV Honors.

French V Honors / AP French (Elective)

1 Credit · Grades 11–12 · Prerequisite: French IV
This class emphasizes advanced grammatical points and prepares the student for the Advanced Placement Exam. Instruction is continued in oral and listening skills with more emphasis on impromptu scenarios. In addition, students compose advanced written compositions and are exposed to authentic reading material. The students will be introduced to some literary works. Emphasis is on extensive drills and exercises that cover all areas of grammar. Instruction is in French. **Need-based financial assistance is available to take advanced placement exams.

French III, Dual Enrollment (Elective)

1 Credit · Grades 10–12 · Prerequisite: FRE 101 or Two Years of HS French or Placement
Introduces cultural awareness, listening, speaking, reading, and writing skills and emphasizes basic sentence structure. This is a UCGS transfer course. Prerequisite: FRE 101, or two years of successful completion of high school French, or demonstrated experiential learning, or by placement test, or equivalent.

Spanish I (Elective)

1 Credit · Grades 9–12 · No Prerequisite Students are introduced to the basic communication skills (listening, speaking, reading, and writing) through the exploration of relevant topics and the cultures where Spanish is spoken. There is an emphasis on transitioning to a novice mid level.

Spanish II (Elective)

1 Credit · Grades 9–12 · Prerequisite: Spanish I
Spanish II reviews and further explores relevant topics. Students progress toward proficiency in reading, writing, speaking, and listening. There is an emphasis on transitioning to a novice high level.

Spanish III (Elective)

1 Credit · Grades 9–12 · Prerequisite: Spanish II
Students continue to develop language proficiency through the exploration of relevant topics. Reading, writing, listening, speaking, and culture are all integrated into the course. There is an emphasis on transitioning to a low intermediate level performance on tasks. Dual enrollment opportunities may be available.

Spanish III Native Speaker (Elective)

1 Credit · Grades 9–10 · Prerequisite: Spanish II + Teacher Recommendation or Placement
In this course students develop their vocabulary, writing, and oral communication skills by studying topics relevant to their personal experience as heritage or native speakers of Spanish. The class explores different regions of the Spanish speaking world as well as their art, music, history, and literature. This class is taught in Spanish.

Spanish IV Honors Level (Elective)

1 Credit · Grades 10–12 · Prerequisite: Spanish III
Spanish IV continues the development of language proficiency with emphasis on more complex linguistic skills and in-depth cultural studies. The target language is used almost exclusively. There is an emphasis on transitioning to an intermediate, mid-performance level on tasks.

Spanish IV Native Speaker (Elective)

1 Credit · Grades 10–12 · Prerequisite: Spanish III Native Speaker or Recommendation
This course is a continuation of Spanish III Native Speaker. Students develop their vocabulary, writing, and oral communication skills by studying additional topics relevant to their personal experience as heritage or native speakers of Spanish. The class explores different regions of the Spanish-speaking world as well as their art, music, history, and literature. This class is taught in Spanish.

Spanish V Honors Level (Elective)

1 Credit · Grades 11–12 · Prerequisite: Spanish IV
Based on the ACTFL Proficiency Guidelines, Spanish 5 students will work towards meeting the

target proficiency goal of Intermediate High in Spanish. Students will learn additional sentence and grammar structures to be applied in their communication. For language students there are four elements of communication that are critical to their success. Language students should learn to interpret communication from others through reading and listening and should also be able to produce language through speaking and writing. Students will be assessed in categories of speaking, reading, listening and writing with appropriate feedback offered in each area so that students can continuously improve their performance.

Spanish IV, Dual Enrollment

1 Credit · Prerequisite: SPA 102, or three years of successful completion of high school Spanish, or demonstrated experiential learning, or by placement test, or equivalent, plus admission to Blue Ridge Community College

In this course, students will continue to develop cultural awareness, listening, speaking, reading, and writing skills as complex sentence structures are introduced. Classes may be conducted in the target language. Part I of II. This is a UCGS transfer course. Students may receive 3 college credits: SPA 201.

Spanish V, Dual Enrollment

1 Credit ·Credit Prerequisite: SPA 201, or four years of successful completion of high school Spanish, or demonstrated experiential learning, or by placement test, or equivalent, plus admission to Blue Ridge Community College

In this course, students will continue to develop cultural awareness, listening, speaking, reading, and writing skills with a continued emphasis in complex sentence structures. Classes may be conducted in the target language. Part II of II. This is a UCGS transfer course. Students may receive 3 college credits: SPA 202.

AP Spanish Language and Culture (Elective)

1 Credit · Grades 11–12 · Prerequisite: Spanish IV
The AP Spanish Language & Culture course emphasizes communication (understanding and being understood by others) by applying interpretive, interpersonal, and presentational skills in real-life situations. This includes vocabulary usage, language control, communication strategies, and cultural awareness. The AP Spanish Language & Culture course strives not to overemphasize grammatical accuracy at the expense of communication. To best facilitate the study of language and culture, the course is taught almost exclusively in Spanish. The class also explores six main themes: families and communities, global challenges, beauty and aesthetics, contemporary life, personal and public identities, and science and technology. (AP College Board)

Economic & Personal Finance

Required for Standard and Advanced Diploma

Economics and Personal Finance (Required)

1 Credit Grade Level: 10-12
Students will learn how to make informed decisions related to career exploration, budgeting, banking, credit, insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. Development of financial literacy skills and an understanding of economic principles will provide the basis for responsible citizenship and career success. Students will take the W!SE Financial Literacy Certification test as part of this course. Qualified students can take this course online during the summer months through Blue Ridge Community College as a dual enrollment class.

Junior Reserve Officers' Training Corps (JROTC)

1 credit- Grades 9-12
JROTC1 is a cutting-edge leadership and citizenship program that consistently moves forward to improve a Cadet's leadership, social, emotional, and academic skills. The program includes classroom academic studies, character education, team building, leadership opportunities, intramural competitions, field trips, and unique training opportunities. JROTC does NOT recruit for the Armed Forces, nor do the Cadets have a service obligation. JROTC also does NOT conduct combat skills training. JROTC is a highly visible program with many benefits and advantages for the student, the school, the parents, and the community. Our instructors are positive role models selected based on their honorable military service, experience, training proficiency and expertise, people skills, and professionalism.

Career & Technical Education (CTE)

Work-based learning

A high-quality work-based learning (WBL) experience is a school-coordinated experience within the workforce that includes sustained engagement with industry professionals in high-demand fields. Students apply course learning in real-world settings while building Virginia's 5 Cs: **critical thinking, collaboration, communication, creative thinking, and citizenship**. These experiences help students practice technical and durable skills, earn industry credentials and/or postsecondary credit, and receive feedback and mentoring from professionals.

High-quality WBL types (that meet Virginia's definition) include:

- Clinical Experiences

- Entrepreneurship
- Internship
- Registered Apprenticeship
- School-Based Enterprise
- Select Immersion Supervised Agricultural Experiences

Each of these experiences is aligned with CTE completer goals, regional workforce needs, and postsecondary readiness.

Clinical Experiences

With a focus on health and medical sciences, students are placed in healthcare settings such as hospitals, clinics, or other facilities. Students observe and assist under the supervision of licensed professionals, applying theoretical knowledge in practical environments. Experiences often include patient care, medical procedures, diagnostic techniques, and team collaboration, building competence and preparing students for healthcare careers and licensing.

Entrepreneurship

A high-quality entrepreneurship experience is a student-led business venture in which students design, launch, and manage a business that produces goods or services. Under the guidance of an industry mentor, students apply academic and technical skills, manage finances, make decisions, and develop Virginia's 5 Cs. Experiences are sustained, include industry feedback, and may lead to industry-recognized credentials or postsecondary credit.

Internship

Internships involve student performance of substantive work for an employer at an authentic worksite. Placements often align with students' career plans and provide real-world experience in a chosen field. High-quality internships include on-the-job practice of career-related knowledge and skills and meaningful supervision from employers.

Registered Apprenticeship

A registered apprenticeship is a structured training program developed in consultation with the Virginia Department of Workforce Development and Advancement (Virginia Works). It combines paid on-the-job training with related technical instruction. Apprenticeships provide individuals with a pathway to skilled careers and employers with a talent pipeline. CTE programs provide related technical instruction based on statewide curriculum frameworks.

School-Based Enterprise (SBE)

School-based enterprises allow students to design, plan, operate, and grow a business that provides goods or services to real customers on campus, via mobile units, or online. SBEs use industry-standard equipment and partner students with professionals for supervision and mentorship. Students learn leadership, supervision, and management skills through authentic business operations.

Select Immersion Supervised Agricultural Experiences (SAE)

Immersion SAEs provide agricultural education students with hands-on experience in their chosen career pathway. Students build on foundational SAEs, gain financial and management skills, and test their career interests. Four Immersion SAE types meet high-quality WBL criteria: placement/internship, ownership/entrepreneurship, research (experimental, analytical, or invention), and school-based enterprise.

For more information about Work-Based Learning, students should contact their **school counselor, career coach, principal, and/or CTE teachers.**

Agricultural

Membership and active participation in the FFA (Future Farmers of America) is encouraged for all agriculture students. Some courses approved for grades 10–12 may be taken concurrently with Applied Agricultural Concepts with counselor approval.

General Agriculture (Elective)

1 Credit Grade Level: 9-12
This class is offered to any student that is identified as a special needs student. Instruction is provided to students for the development of mechanical skills, wood working, and metalworking. Students are also instructed in basic plant and animal care.

Applied Agricultural Concepts (Elective)

1 Credit Grade Level: 9-12
Students acquire fundamental agricultural competencies needed for rural or urban living. Areas of instruction include food production, handling, and preparation; introduction to the livestock and poultry industry; soil, soil fertility, and cultural practices; mechanical applications; plant systems and disease/pest management for shrubs, lawns, pastures, gardens, and fruit trees. Contextual instruction and student participation in co-curricular career and technical student organization (CTSO) activities will develop leadership, interpersonal, and career skills. High-quality work-based learning (HQWBL) will provide experiential learning opportunities

related to students' career goals and/or interests, integrated with instruction, and performed in partnership with local businesses and organizations.

Agriculture Business and Technology I (Elective)

1 Credit Grade Level: 10-12
This course is designed to assist students in developing the necessary knowledge, skills, habits, and attitudes for employment in off farm agriculture businesses. These businesses provide supplies and services to the agriculture community and process and/or market agriculture products. Where training centers are available, cooperative arrangements are made with local agricultural businesses to provide occupational experience for students. When training centers are not available, simulated experiences may be provided. Instruction in product knowledge relating to items such as feed, seed, fertilizer, machinery, and agricultural chemicals is provided.

Agriculture Business and Technology II (Elective)

1 Credit Grade Level: 11-12, Prerequisite: Agriculture Business and Technology I
Students develop the necessary knowledge, skills, habits, and attitudes for employment in agricultural businesses. Where training centers are available, cooperative arrangements with local businesses provide occupational experiences for students. When training centers are not available, simulated experiences may be provided. Dual Enrollment may be available.

Agricultural Structural Systems (Elective)

1 Credit Grade Level: 10-12
The course will provide students with knowledge and skills for building agricultural structures and systems. Instruction will focus on the surveying, design, construction, plumbing, masonry, and electrical aspects of building systems. Students will participate in supervised agricultural experiences, leadership opportunities, and will investigate career pathways and postsecondary options.

Agricultural Fabrication and Emerging Technologies (Elective)

1 Credit Grade Level: 11-12, Prerequisite, Agricultural Structural Systems, Prerequisite: Agricultural Structural Systems
Students will receive instruction in metal fabrication, including cutting, welding, and cold metalworking process, for agricultural applications. The course will also include the investigation of emerging technologies used within the field of agriculture. Leadership and career skills will be incorporated throughout with supervised agricultural experiences and participation in the co-curricular FFA organization.

Biological Applications in Agriculture (Elective)

1 Credit Grade Level: 10-12
This course is designed to integrate science and agriculture in the agriculture classroom. Students explore the world of agriculture and the biological principles associated with it. Competencies emphasize and reinforce standards of learning for biology with agricultural applications. Students may have the option to dual enroll during this course with James Madison University. This can result in the student earning college credit and a weighted grade if this option is exercised.

Biotechnology Foundations (Elective)

1 Credit Grade Level: 10-12
This course focuses on various techniques that are used to modify living organisms, or parts of organisms, to improve plants and animals, and the development of microorganisms for specific purposes. Student activities range from bioprocessing and genetic engineering to biomedicine, biomedical systems, and the environment. Students gain insight and understanding of biotechnology career fields.

Biotechnology Applications in Agriculture (Elective)

1 Credit Grade Level: 11-12, Prerequisite: Biotechnology Foundations
This course enables students to understand the uses of biotechnology in the fields of plant and animal agriculture, the environment, and food science. Students develop occupational skills in agricultural biotechnology, and apply the skills and concepts needed for careers in biotechnology. The course provides students with the knowledge to make balanced judgments regarding the benefits and concerns posed by agricultural biotechnology. Students are also involved in many research and application activities.

Ecology and Natural Resources I (Elective)

1 Credit Grade Level: 10-12, 9 with Applied Ag Concepts
This course is designed to provide a conceptual framework of environmental, ecological and natural resource conservation content and develops scientific and technical competencies required to deal effectively with environmental and natural resources management problems. Instructional content includes care, management and preservation of soil, water, air, forestry, and wildlife with the integration of biology, chemistry, physics, and other physical sciences, math, English and history. Topics included are current environmental problems, methods, and practices and the application of science and technology to natural resources and environmental management. Specific environmental concerns and issues common to the local school community and of national importance are incorporated into the instructional program

Ecology and Natural Resources II (Elective)

1 Credit Grade Level: 10-12, Prerequisite: Ecology and Natural Resources I

This course is the second in the Ecology and Conservation series and includes instruction in forest protection and harvesting, fish pond ecology and management, maintenance of wildlife and aquatic resources, soil and water management systems, construction of Best Management Practices and leadership training. Much of the instruction in this course may be individualized. Because of the emphasis on different facets of natural resources management, the course varies to meet local needs and interests. Dual Enrollment may be available.

Equine Management Production (Elective)

1 Credit Grade Level: 10-12
Students learn how to care and manage horses. Equine health, nutrition, management, reproduction, training, evaluation, and showmanship are the major Instructional areas. Course content includes instruction in the tools, equipment, and facilities for equine enterprises. Business management topics include the economics of boarding, training, and merchandising horses.

Horticulture I (Elective)

1 Credit Grade Level: 10-12, 9 with Applied Ag Concepts
This course is designed to give an overview of horticulture and career and business opportunities. The curriculum includes hands-on instruction in growing medias, plant propagation, greenhouse operations, nursery planting and pest control. In addition, application of agriscience concepts will be included. Time will be dedicated to job analysis, opportunities, and requirements for horticulture employment.

Horticulture II (Elective)

1 Credit Grade Level: 10-12, Prerequisite: Horticulture I
This course is designed to provide instruction in the management of the greenhouse and landscaping business. Areas to be covered include maintenance of greenhouses, time management, seeding and planting rates, fertilizer application and pesticide application. The preparation of income statements, cash flows and net worth statements will be taught. This course will meet the needs of students planning to pursue further education in the horticulture field. Dual enrollment may be available in this course.

Introduction to Animal Systems (Elective)

1 Credit Grade Level: 11-12
Students develop competencies in each of the major areas of the Animal Systems career pathway including animal nutrition, reproduction, breeding, care, and management. Students learn agricultural mechanics applicable to animal systems. As with all agriculture courses, students will be exposed to principles of leadership and opportunities within student organizations along with Supervised Agricultural Experience opportunities. Dual enrollment may be available.

Small Engine Repair (Elective)

1/2 or 1 Credit Grade Level: 10-12
Small Engine Repair is an 18-week intensive study of the operation, maintenance, and repair of small gasoline and diesel engines. Instructional topics include principles of operation of gasoline and diesel engines, tune up and maintenance procedures, and disassembly, overhaul, and reassembly. Instructions may include topics relative to two cycle and four cycle engines commonly found on lawn mowers, garden tractors, snow blowers, rototillers, chain saws, and other equipment. Most of the instruction includes hands-on laboratory experiences. Leadership activities and other FFA activities are encouraged.

Business & Marketing

Some courses approved for grades 10–12 may be taken concurrently with **Principles of Business and Marketing** with counselor approval.

Accounting (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Students study the basic principles, concepts, and practices of the accounting cycle. Students learn fundamental accounting procedures using a manual and/or electronic system, and also: use spreadsheet software; use automated accounting software; account for activities of a service business organized as a sole proprietorship and for a merchandising business organized as a partnership; analyze and journalize transactions; practice writing checks and reconciling a checking account; calculate employee and employer taxes; compute gross and net earnings; identify duties of an accountant; and create employment documents including a resume and a cover letter. Students are encouraged to participate in co-curricular FBLA activities.

Advanced Accounting (Elective)

1 Credit · Grades 11–12 · Prerequisite: Accounting
Students gain in-depth knowledge of accounting procedures and techniques used to solve business problems and make financial decisions. Students use accounting and spreadsheet software to analyze and interpret business applications. Students may also: review Accounting I concepts; use automated accounting software; use spreadsheet software; value inventory using the LIFO, FIFO and weighted average methods; calculate depreciation for a company's building; demonstrate the ethical-decision making process; update the resume created in Accounting I; and calculate the portion of notes receivable deemed uncollectible. Students are encouraged to participate in co-curricular FBLA activities.

Entrepreneurship (Elective)

1 Credit · Grades 10–12 · No Prerequisite
This course introduces students to the exciting world of creating, owning, and launching their own business. Students will learn concepts and techniques for planning an entrepreneurial venture, using design thinking and business model development. Students will learn about financial statements, marketing principles, sales and customer service, and basic economic principles for successful operation.

Entrepreneurship, Advanced (Elective)

1 Credit · Grades 11–12 · Prerequisite: Entrepreneurship
This course is designed for students who wish to concentrate on advanced strategies for entrepreneurship, building upon concepts introduced in Entrepreneurship. The focus of the course is on the development of a business plan and small business management. Students will establish, market, and maintain a business.

Introduction to Marketing (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Explore the world of marketing to understand its importance in today's society. Students will develop skills related to interpersonal communication, self-presentation, economics, marketing, sales, employability, career discovery, promotion, and ethical decision-making—all essential skills in any career. Contextual instruction and student participation in DECA activities will develop leadership, interpersonal, and career skills.

Principles of Business (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Students discover the roles of business and marketing in the free enterprise system and the global economy. Students examine basic financial concepts of banking, insurance, credit, taxation, and investments to provide a strong background for making sound decisions as consumers, wage earners, and citizens. The real-world effects of technology, effective communication, and interpersonal skills is evident throughout the course. This course also supports career development skills and explores career options.

Travel and Tourism Marketing (Elective)

1 Credit · Grades 10–12 · No Prerequisite
This course examines the components of the travel and tourism industry, including attractions, lodging, transportation, and food and beverage. Other topics include the history and political, social, and cultural effects of travel and tourism on local, state, and global environments. Students develop competencies in the areas of communication, customer service, marketing, industry technology, economics, and management functions and are provided with opportunities for hands-on, real-world applications. Applying academic skills is also part of this course.

Business Law (Elective)

1 Credit · Grades 11–12 · No Prerequisite
Students examine foundations of the American legal system and learn the rights and responsibilities of citizens. Students gain practical knowledge and life skills by exploring economic and social concepts related to laws governing business and individuals. Focus areas include contracts; consumer protection; criminal, tort, international, family/domestic, and employment law; and legal careers. Students are encouraged to participate in co-curricular FBLA activities.

Real Estate (Elective)

1 Credit · Grades 11–12 · No Prerequisite
In this course students will examine the practical applications of real estate principles, the impact the industry has on the economy, home ownership, entrepreneurship, and careers in the industry. Students will investigate topics including contracts, financing, land descriptions, legal concepts, marketing, titles, appraisals, agency responsibilities, and management of real estate. Upon successful completion of the course students are eligible to take the Virginia Real Estate Salesperson Exam, which covers both state specific and national topics.

AP Computer Science A (Elective)

1 Credit · Grades 11–12 · Prerequisite: Algebra II
AP Computer Science A is a course that is designed to familiarize students with how to effectively develop computer programs, analyze algorithms, develop date structures, and evaluate created programs. The design and implementation of computer programs to solve problems is a fundamental objective of the course. Students tune their problem-solving skills as they fulfill their expectation of developing a computer program that solves a problem. While developing a computer program, students are using their program as the context for experiencing the other important aspects of computer science. Students will also learn about computing in context to ensure the responsible use of computer systems. Students are encouraged to participate in co-curricular FBLA activities.

AP Computer Science Principles (Elective)

1 Credit · Grades 11–12 · Prerequisite: Algebra I
AP Computer Science Principles introduces students to the central ideas of computer science, inviting students to develop the computational thinking vital for success across multiple disciplines. The course is unique in its focus on fostering students to be creative and encouraging students to apply creative processes when developing computational artifacts. Students design and implement innovative solutions using an iterative process similar to what artists, writers, computer scientists, and engineers use to bring ideas to life. Students are encouraged to participate in co-curricular FBLA activities.

Computer Information Systems (Elective)

1 Credit · Grades 10–12 (Grade 9 with IT Fundamentals) · Prerequisite: None or IT Fundamentals for 9th
Students apply problem-solving skills to real-life situations through integrated activities utilizing word processing, spreadsheet and multimedia presentation software and database software. The Microsoft IT Academy program is used to supplement training in preparation for Microsoft Office Certification. Students are also introduced to beginning programming techniques and Internet activities. *Beginning with second semester, CIS students may have the option to complete their CIS course as a cyber-course taught online through Blue Ridge Community College. The student will receive high school credit, college credit and a weighted grade if this option is exercised. Students are encouraged to participate in co-curricular FBLA activities.

Advanced Computer Information Systems (Elective)

1 Credit · Grades 10–12 · Prerequisite: Computer Information Systems
Students apply problem-solving skills to real-life situations through advanced integrated software applications, programming, use of the Internet and expert systems. Students will work individually and in groups to explore advanced computer maintenance activities, telecommunications and networking. The Microsoft IT Academy Program is used to supplement training in preparation for Microsoft Office Certification. Students are encouraged to participate in co-curricular FBLA activities.

Computer Programming (Elective)

1 Credit · Grades 10–12 · Recommended Prerequisite: Computer Information Systems
Students will develop critical thinking and problem-solving skills by writing programs and exploring programming concepts, using algorithmic procedures, implementing programming procedures in one or more languages, and mastering programming fundamentals. Students will also develop interactive multimedia applications, including apps or games. Concepts in this course shed light on a wide range of career opportunities in the tech industry as students will learn valuable computational thinking skills that help them understand the modern digital world. Contextual instruction and student participation in co-curricular career and technical student organization (CTSO) activities will develop leadership, interpersonal, and career skills. High-quality work-based learning (HQWBL) will provide experiential learning opportunities related to students' career goals and/or interests, integrated with instruction, and performed in partnership with local businesses and organizations.

Fashion Marketing (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Students gain basic knowledge of the apparel and accessories industry while developing competencies necessary for successful employment in the apparel business. Competencies include social, economic, personal selling, sales promotion, purchasing, physical distribution, market planning, product/service technology, and marketing math. Students are encouraged to join the DECA organization and to participate in competitive and leadership opportunities.

Advanced Marketing (Elective)

1 Credit · Grade 12 · Prerequisite: Marketing or Other Level II Marketing Course
Students gain an in-depth knowledge of marketing functions and supervisory and management responsibilities while developing important skills for employment and advancement on a supervisory level. Students are encouraged to join the DECA organization and to participate in competitive and leadership opportunities. Dual enrollment may be available.

Sports, Entertainment, and Recreation Marketing (Elective)

1–3 Credits · Grades 10–12 · No Prerequisite
Sports, Entertainment, and Recreation Marketing (SER) is a specialized course for students with a career interest in the fields of sports, entertainment, or recreation. In addition to providing a fundamental knowledge of global marketing, this course is designed to equip students with entry-level competencies in the areas of sponsorship, promotion, advertising, legal contracts, agents, event marketing, and communications. Students also explore SER career options. Identification of the major impact SER has on the global economy will be addressed. This course is also designed to develop critical thinking and decision making skills through the application of marketing principles in the SER industries and to develop leadership skills through the application of marketing principles in the SER industries and to develop leadership skills through active participation in the school's DECA chapter. Further preparation includes a strong base of skills in communications, mathematics, social studies, and the arts. Students are encouraged to join the DECA organization and to participate in competitive and leadership opportunities.

Cybersecurity Fundamentals (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Cybersecurity affects every individual, organization, and nation. This course focuses on the evolving and all-pervasive technological environment with an emphasis on securing personal, organizational, and national information. Students will be introduced to the principles of cybersecurity, explore emerging technologies, examine threats and protective measures, and investigate the diverse high-skill, high-wage, and high-demand career opportunities in the field of cybersecurity. Students are encouraged to participate in co-curricular FBLA activities.

Career Connections

Business and Industry Mentorship (Elective)

0.5–1 Credit · Grades 11–12 · Prerequisite: Requires an application and must complete a sequence of CTE courses related to placement
Business and Industry Mentorship is a career connections elective course for students who want exposure to a career field and practice in job application and interview skills. The course is

designed to provide students with an in-depth orientation to a career and exposure to the supervisory, management, and decision-making skills needed for the profession. Placements are possible in a variety of settings related to the student's CTE coursework. This class is graded on the normal A-F grading scale. 140 hours are required for one credit.

Introduction to Teachers for Tomorrow (Elective)

1 Credit · Grades 10–12 · Recommended Prerequisite: Early Childhood Education
Virginia Teachers for Tomorrow (VTfT) fosters student interest, understanding, and appreciation of the teaching profession and allows secondary students to explore careers in education. Students will engage with students and teachers to learn the foundations of teaching and learning. Students build a foundation for teaching; learn the history, structure and governance of teaching; apply professional teaching techniques in the VTfT classroom and field experience; and reflect on their teaching experiences. This course is offered as a summer course to be paired with a teacher and work with elementary students. Training will be provided prior to the summer school experience. The course may be taken out of sequence. It is open to any high school student with the recommendation of a teacher.

Teachers for Tomorrow I (Elective)

1 Credit · Grades 11–12 · Prerequisite: Application; Recommended: Early Childhood Education
Virginia Teachers for Tomorrow (VTfT) fosters student interest, understanding, and appreciation of the teaching profession and allows secondary students to explore careers in education. Students build a foundation for teaching; learn the history, structure and governance of teaching; apply professional teaching techniques in the VTfT classroom and field experience; and reflect on their teaching experiences. Additional educational leadership opportunities are offered through the student organization, **Educators Rising.**

Teachers for Tomorrow II (Elective)

1 Credit · Grades 11–12 · Prerequisite: Teachers for Tomorrow I
Students continue to explore careers in the Education and Training Career Cluster and pathways. This course provides the opportunity for students to prepare for careers in education as they research postsecondary options, learn about the process of teacher certification in Virginia, and participate in a practicum experience.

Family & Consumer Science

Courses offered in the Family and Consumer Sciences curriculum focus on the development of management skills needed throughout the lifespan. All students will benefit from the courses that are committed to empowering students to fulfill individual, family, community, and work roles and to achieve a balance in the interaction among these roles in a diverse, global society. The student enrolling in a Family and Consumer Sciences class is encouraged to become a member of **Family, Career, and Community Leaders of America (FCCLA)**. FCCLA provides

opportunities for students to participate in community service and other projects that help build good citizenship and potential as leaders in today's world. Competencies for all courses are aligned with the Virginia SOLs.

Some courses approved for 10-12 grade can be taken concurrently with Nutrition and Wellness or Individual Development if approved by the counselor

Child Development and Parenting (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Students will focus on analyzing parenting roles and responsibilities, ensuring a healthy start for mother and child, evaluating support systems that provide services for parents, and evaluating parenting practices that maximize human growth and development. Critical thinking, practical problem solving using case studies, and entrepreneurship opportunities within the area of parenting responsibilities and child development are emphasized.

Independent Living (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Independent Living is an exceptionally relevant course to help students become prepared to face the challenges of living on their own. Students investigate careers, learn to make responsible consumer decisions, establish skills to manage personal and family finances, discuss balancing work and family roles, understand basic child development and principles of parenting, and be able to create and maintain a living environment (to include housing, clothing, nutrition, and meal preparation). All students are encouraged to take this elective prior to graduation and living independently.

Individual Development (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Individual Development focuses on encouraging personal potential of self and others; enhancing positive views of self and others; managing stressful situations; formulating a plan to achieve career goals; forming healthy, caring relationships with family members and peers; and managing conflict. Critical thinking and practical problem solving are emphasized throughout the curriculum, including short units in nutrition and food preparation skills, construction of a simple sewing project, and money management.

Introduction to Early Childhood Education and Services (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Students focus on the principles of child growth and development; development of self-concepts and building self-esteem; appreciation of diversity; learning experiences for children; principles of guiding children in a positive manner; healthy and safe environments; career development; and careers related to early childhood professionals through hands-on exploration, projects, and group learning.

Introduction to Food Operations (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Students will explore units of study in food science and technology; dietetics and nutrition services; diverse cultures; cuisines and service styles; current trends; food and beverage production and preparation; and food safety and sanitation. Food-related careers will also be examined.

Nutrition and Wellness (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Nutrition and Wellness focuses on making choices that promote wellness and good health; analyzing relationships between psychological and social needs and food choices; choosing foods that promote wellness; student lab experiences for preparing and serving nutritious meals and snacks, with an emphasis on food safety and sanitation; selecting and using equipment for food preparation; and identifying strategies to promote optimal nutrition and wellness of society. Critical thinking, practical problem solving, and career opportunities within the area of nutrition and wellness are emphasized.

Food Science and Dietetics (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Through laboratory and other practical experiences, students will develop a deeper appreciation for the food system and the impact of science on the food and nutrition industries. Students will explore food sources, the science and technology of food production and processing, and the implications for individual and global health and wellness. Career opportunities are broad and include health care; dietetics; and food research, development, and manufacturing. Contextual instruction and student participation in FCCLA activities will develop leadership, interpersonal, and career skills.

Health & Medical Sciences

Introduction to Health and Medical Sciences (Elective)

1 Credit · Grades 9–12 · No Prerequisite
This course introduces the student to a variety of healthcare careers and develops basic skills required in all health and medical sciences. It is designed to help students understand the key elements of the U.S. healthcare system and to learn basic healthcare terminology, anatomy and physiology for each body system, pathologies, diagnostic and clinical procedures, therapeutic interventions, and the fundamentals of traumatic and medical emergency care. Throughout the course, instruction emphasizes safety, cleanliness, asepsis, professionalism, accountability, and efficiency within the healthcare environment. Students also begin gaining job-seeking skills for entry into the health and medical sciences field. Contextual instruction and student participation in co-curricular career and technical student organization (CTSO) activities will develop

leadership, interpersonal, and career skills. High-quality work-based learning (HQWBL) will provide experiential learning opportunities related to students' career goals and/or interests, integrated with instruction, and performed in partnership with local businesses and organizations.

Medical Terminology (Elective)

1 Credit · Grades 10–12 · Prerequisite: Introduction to Health and Medical Sciences
Students learn common medical terms essential for patient care. Topics are presented in logical order, beginning with each body system's anatomy and physiology and progressing through pathology, laboratory tests and clinical procedures, therapeutic interventions, and pharmacology. Students learn concepts, terms, and abbreviations for each topic. Contextual instruction and student participation in co-curricular career and technical student organization (CTSO) activities will develop leadership, interpersonal, and career skills. High-quality work-based learning (HQWBL) will provide experiential learning opportunities related to students' career goals and/or interests, integrated with instruction, and performed in partnership with local businesses and organizations.

Technology & Engineering

Some courses approved for grades 10–12 may be taken concurrently with **Technology and Engineering Foundations** with counselor approval.

Aerospace Technology I (Elective)

1 Credit · Grades 10–12 · No Prerequisite
Aerospace Technology I offers an introduction to the aerospace industry through a hands-on approach and exploration of topics such as flight, space, and supporting technologies. Students explore the aviation and space industries by examining the history of aviation, aerodynamics and aircraft components, flight conditions, airport and flight operations, space systems, rocketry, and living and working in space.

Aerospace Technology II (Elective)

1 Credit · Grades 11–12 · Prerequisite: Aerospace Technology I
Aerospace Technology II provides an advanced exploration of flight, space travel, and supporting technologies through a practical approach centered around problem solving. Students explore concepts in aircraft operations; aircraft design, flight safety, and maintenance; airport infrastructure; and small unmanned aircraft systems (sUAS).

Construction Technology (Elective)

1 Credit · Grades 10–12 · Recommended Prerequisite: Technology and Engineering Foundations or Materials and Processes
Students in this laboratory course will design, build, and test scale model structures (trusses)

and CO2 powered dragsters. They may also work with projects that help them to understand the jobs of architects, carpenters, contractors, and design engineers, including but not limited to drama set design and construction, electrical wiring activities, and architectural plan reading activities. Students may also work as a class to build a full-size storage shed for use at the school. Dual enrollment may be available.

Engineering Exploration (Elective)

1 Credit · Grades 10–12 (Grade 9 with Technical Drawing and Design) · No Prerequisite or Recommended TDD
This course will enable students to examine technology and engineering fundamentals related to solving real-world problems. Students will be exposed to a variety of engineering specialty fields and related careers to determine whether they are good candidates for postsecondary educational opportunities in engineering. Students will gain a basic understanding of engineering history and design, using mathematical and scientific concepts. Students will participate in hands-on projects in a laboratory setting as they communicate information through team-based presentations, proposals, and technical reports.

Engineering Analysis and Applications II (Elective)

1 Credit · Grades 10–12 · Prerequisite: Engineering Exploration
Engineering Analysis and Applications II is the second of a possible four-course sequence that will allow students to apply the engineering design process to areas of the designed world, explore ethics in a technological world, and examine systems in civil, mechanical, electrical, and chemical engineering. Students will participate in STEM-based, hands-on projects as they communicate information through team-based presentations, proposals, and technical reports.

Communication Systems (Elective)

1 Credit · Grades 9–12 · No Prerequisite
This course offers students an opportunity to study all aspects of digital technology. Students learn about various cathodes, techniques and equipment used in communication technologies. Communication Systems provides experiences in the fields of imaging technology, video and media, and technical design. Lab activities may also include using GIS and GPS technology; creating technical sketches, drawings and designs; creating simple three-dimensional models; capturing and manipulating digital and traditional photographs; and planning, filming and editing video projects.

Digital Visualization (Elective)

1 Credit · Grades 11–12 · Prerequisite: Video and Media Technology
Students will gain experiences with computer animation by using graphics and design concepts. Students will solve problems involving 2D and 3D object manipulation, storyboarding, texturing/mapping, lighting concepts, and environmental geometry. They will create a variety of animations that reflect real-world applications and will explore interactive and animation

software. Production of a portfolio showcasing original student work is included. Contextual instruction and student participation in co-curricular career and technical student organization (CTSO) activities will develop leadership, interpersonal, and career skills. High-quality work-based learning (HQWBL) will provide experiential learning opportunities related to students' career goals and/or interests, integrated with instruction, and performed in partnership with local businesses and organizations.

Imaging Technology (Elective)

1 Credit · Grade 12 · Prerequisite: Digital Visualization
Students apply the principles of design in the creation of images. Students explore the development of imaging as a communication medium and its evolution into the digital realm. Image-editing software allows students to enhance images and develop a portfolio. Investigation focuses on career exploration and the application of photographic and imaging technology across various industries. Contextual instruction and student participation in co-curricular career and technical student organization (CTSO) activities will develop leadership, interpersonal, and career skills. High-quality work-based learning (HQWBL) will provide experiential learning opportunities related to students' career goals and/or interests, integrated with instruction, and performed in partnership with local businesses and organizations.

Materials and Processes Technology (Elective)

1 Credit · Grades 10–12 · Recommended Prerequisite: Technology and Engineering Foundations
Students may focus on industrial/technical materials and processes as they participate in automotive design and industrial design activities. Learning experiences include career analysis as well as the use of tools and equipment related to analysis, testing, and processing of metals, plastics, and wood. Activities may also include automotive design scale model cars, CO2 powered dragsters, cardboard chair design projects, simple machine devices, crash test vehicles, battle bots, reverse engineering and plastic projects.

Technology and Engineering Foundations (Elective)

1 Credit · Grades 9–12 · No Prerequisite
Technology Foundations is the first of the high school courses in the design and technology program. Students acquire a foundation in technological material, 45 energy, and information and apply processes associated with the engineering design process. Through selected lab activities, students create new ideas and innovations, build systems and analyze technological products to further learn how and why technology works. The lab activities may include building popsicle stick bridges and testing module structures, scale model houses, rubber band powered vehicles, CO2 powered dragsters, rockets, mass production manufacturing projects, CNC manufacturing projects, technical sketching and drawing assignments, basic electronics projects, solar energy projects and tabletop siege machines. Classes may also produce a product of their own design.

Video and Media Technology (Elective)

1 Credit · Grades 10–12 · Prerequisite: Communication Systems
This course offers students the opportunity to study all aspects of video and media technology. Students learn the importance of copyright law, and learn how to use a digital video camera, wireless microphones, tripods, and many forms of editing software. Students also learn to follow the sequence of production and utilize camera angles, continuity, consistency, and esthetics as they produce professional media such as music videos, advertisements, dramatic videos, how-to videos, and promotional videos.

Massanutten Technical Center (MTC)

MTC Agricultural Courses

Agricultural Production Technology I

(course will be offered at a later date)

1 credit | Grade Level: 10–12 | Prerequisite: Completion of Biology I with a final grade of "C" or higher required or successful completion of another Agriculture course.

Agriculture Production Technology emphasizes plant science, soil science, agricultural business management, and agricultural mechanization, with the student's employment objective to become a farm manager, related agriculture profession (sales, service, and/or research education). The land laboratories consist of: beef cattle, swine, goats, and sheep. The crop enterprises will include: corn, alfalfa, pastures, and fruit and vegetable production. Supervised occupational experience programs and leadership training are important parts of the course. Dual Enrollment opportunities may be available for this class.

Agricultural Production Technology – Livestock Management II

(course will be offered at a later date)

1 credit | Grade Level: 11–12 | Prerequisite: Completion of Agricultural Production I and students must provide their own transportation to the farm. Students enrolled in this course have the option to attend on an odd or even day in the afternoon.

Livestock Production Management includes instruction in agricultural mechanics, with emphasis placed on the application of mechanical skills to farm power and machinery, as well as on soil and water management, supervised farming programs, and leadership training. Students will learn the fundamentals of farm business management, marketing of livestock and related

products as well as livestock production records and management. Dual Enrollment opportunities may be available for this class. **Certification available**

Agricultural Production – Operating the Farm Business III

(course will be offered at a later date)

1 credit | Grade Level: 11–12 | Prerequisite: Completion of Agricultural Production I and students must provide their own transportation to the farm.

Operating The Farm Business includes advanced instruction in Farm Management including Financial Statements, Breeding Programs, Whole Farm Planning, Marketing and Labor Management, just to name a few. Students will be given management opportunities for areas of the school farm that interest them.

Veterinary Science I

1 credit | Grade Level: 10–12 | Prerequisite: Completion of Biology I with a final grade of "C" or higher required.

Students learn animal science and the care of small animals, including the fundamentals of companion animal species and breeds, behavior and training, body systems, nutrition, and safety. Students develop basic skills and techniques for assisting the Veterinarian/technician in the following areas: handling companion animals and other small mammals, grooming animals/caring for coats, feeding small mammals, and maintaining equipment and facilities. Clinical instruction, coordinated by the Veterinary Science Instructor in our lab setting, emulates an actual veterinary office. Students enrolled in this course will be FFA members.

Veterinary Science II

1 credit | Grade Level: 11–12 | Prerequisite: Veterinary Science I, and students must arrange reliable transportation to clinicals and barn rotations.

Students expand their knowledge of animal science and the care of large animals, including animal structure and function, microbes and disease prevention, parasitology, and genetics and breeding. Students develop more advanced skills and techniques for assisting the Veterinarian/technician in the following areas: handling large animals and exotic animals, applying aseptic techniques, performing first aid and surgery, technical functions, administering medication, handling death and dying, working with wildlife, and performing office functions. On-the-job clinical rotations at a veterinary clinic, coordinated by the Veterinary Science

Instructor, are also a component of this class. Dual Enrollment opportunities are available for this class. Students enrolled in this course will be an FFA member. **Certification: Certified Vet Assistant**

Small Animal Care I

(Concurrent course with Veterinary Science II)

1 credit | Grade Level: 11–12 | Prerequisite: Veterinary Science I, and students must arrange reliable transportation to clinicals and barn rotations.

Students learn how to care for and manage small animals, focusing on the connections between humans and animals, animal behavior, health, nutrition, management, and reproduction. Opportunities to handle live animals may occur. Course content also includes instruction on the tools, equipment, and facilities used in the small animal care industry.

MTC Business Courses

Cybersecurity Systems Technology

1 credit | Grade Level: 10–12 | Prerequisite: Cybersecurity Fundamentals (6302) or any high school computer elective course.

In this course, students will explore the foundations of computer and networking technologies. Students will be able to build, troubleshoot, and secure computer systems and Small Office Home Office networks (SOHO). Additionally, students will develop a knowledge of threat types and basic prevention measures to protect computer systems and networks.

Cybersecurity Systems Technology (Advanced)

2 credits | Grade Level: 11–12 | Prerequisite: Cybersecurity Systems Technology.

This course builds on the network and security fundamentals students learned in their first year. Students will expand the knowledge of security best practices. Additionally, students will gain experience in gathering and analyzing network and security data to identify network intrusions and security risks. Other topics will include incident response and incident handling, cyber kill chain, and computer/network forensics. **Certifications: Certified EC-Council Incident Handler**

Cybersecurity Network Systems

1 credit | Grade Level: 12 | Prerequisite: Cybersecurity Systems Technology (Advanced).

In this course, students will further their exploration of cybersecurity concepts. Students will explore network architecture and design from a security standpoint, determine proper security hardware implementations based on scenarios, explore both current and historical cryptography, and perform risk assessments on simulated client networks. These concepts will be explored using scenario-based training and CTF (capture the flag) activities. Students will also act as mentors and teach various content to second-year cybersecurity students. **Certifications: CompTIA Security+**

Visual Effects / 3D Animation I

1 credit | Grade Level: 10–12 | Prerequisite: Keyboarding or Computer Applications.

Students will begin to learn how to create, texture, and light 3D models that can be used for video, video games, or animation. Students will also learn to create short animations and character movements. The class will primarily use the software Blender to achieve this work.

Visual Effects / 3D Animation II

1 credit | Grade Level: 11–12 | Prerequisite: Visual Effects / 3D Animation I

Students will increase their skill level in Blender while learning more advanced concepts in modeling, texturing, simulation, and animation. This class will focus on creating a portfolio of a student's custom work that can be presented to future colleges or employers. Dual Enrollment opportunities are available for this class. **Certification: Portfolio-based assessment**

Graphic Communication Systems (Concurrent course with Visual Effects/3D Animation II

1 credit | Grade Level: 11–12 | Prerequisite: Visual Effects / 3D Animation I

This course provides experiences related to a wide range of tools and materials used to reproduce information and images. Students develop competencies in message design, composition and assembly, and message transfer and product conversion. Various digital and

print output techniques and devices are used to develop concepts into finished products. **Certification: Portfolio-based assessment**

MTC Family & Consumer Science Courses

Culinary Arts I

2 credits | Grade Level: 10–12

The Culinary Arts I curriculum provides students with the foundations for a comprehensive knowledge of the food service industry and with the opportunities to build technical skills. Students learn and practice procedures related to kitchen and food safety, sanitation and emergency measures. As they explore food preparation techniques, students will apply these techniques to the food production used to produce meals served in the student-run café. Students will also practice purchasing, receiving and storage skills needed to maintain food quality. The curriculum places strong emphasis on science and mathematical knowledge. Students will be required to provide their own kitchen safe, non-slip work shoes.

Culinary Arts II

2 credits | Grade Level: 11–12 | Prerequisite: Culinary Arts I.

Culinary Arts II expands on the comprehensive knowledge of the foodservice industry and their technical skills. Students will practice and build on the skills learned in Culinary Arts I and expand on principles of safety and sanitation, nutrition, dining room service, menu development, advanced food preparation techniques and baking skills. Students prepare for careers as chef/cook, baker/pastry, hospitality worker, dietetic aid/assistant or entrepreneur. Students may receive on the job training in an approved position. **Certifications: ServSafe Manager**

MTC Health & Medical Sciences

Dental Careers I

2 credits | Grade Level: 10–12

Students are introduced to careers in dentistry, including dentist (general and specialists), dental assistant, hygienist, dental laboratory technician, and front office staff. Students practice and learn about many of the skills utilized in the profession while attaining all the skills necessary to become an entry-level dental assistant. Study includes infection control and OSHA standards,

anatomy and physiology, tooth morphology, oral histology, preventive dentistry, operative techniques, dental materials/laboratory skills, effective communication, and office administration.

Dental Careers II

2 credits | Grade Level: 11–12 | Prerequisite: Dental Careers I, and students must arrange reliable transportation to internship.

Units of study include medical emergencies, coronal polishing, oral pathology, dental roentgenology, nutrition, pharmacology, and advanced laboratory techniques. While attending classes for part of the week, students also have an opportunity to participate in internships in local private dental offices, where they participate in all phases of dental care delivery. Students are also eligible to take a radiology course to receive the Virginia Health and Safety Certificate. This certification can qualify them to work as an entry-level dental assistant. Many graduates choose to continue their dental education at community colleges and universities.
Certifications: Dental Assistant National Board (DANB) – Infection Control (ICE) exam, CPR & First Aid, VA Health and Safety Radiation Certification, and Dental Assistant Certificate

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Emergency Medical Technician (EMT) I & II

2 credits | Grade Level: 11–12 | Prerequisite: Students must be at least 16 years old by the first day of the course offering. Fire & Rescue I (cumulative grade of 70% or greater and written and skills exam with 70% or higher) or completion of Biology I with a final grade of "C" or higher required.
(Meets daily; students must pass first-semester EMT I to be eligible for EMT II. Program completion in one year.)

This course primarily focuses on Emergency Medical Services. Students are introduced to multi-faceted situations (e.g., simulated terrorism, accidents, and natural disasters) by managing resources such as medevac helicopters, emergency medical personnel, technical rescue teams, and community-based organizations. Students become familiar with emerging technologies such as communications software (e.g., dispatch systems, GIS, mapping systems, incident reporting, and simulation programs). Students acquire teamwork, critical thinking, public speaking, research, report writing, and incident management skills. Students will learn medical terminology, how to treat both medical conditions and traumatic injuries, and how to operate medical equipment such as suction devices, defibrillators, glucometers, blood pressure instruments, airway devices, and patient stabilization equipment. Students will learn anatomy and physiology and how to manage and provide patient care. This course challenges students academically, mentally, and physically. Students are expected to participate in ride-alongs with fire station personnel and must have reliable transportation. **Certifications: National Registry**

Emergency Medical Technician (NREMT) or National Registry Emergency Medical Responder (NREMR)

Fire and Rescue I & II

3 credits | Grade Level: 10–12 | Prerequisite: Students must be at least 16 years old by the first day of the course offering.
(Meets daily; students must pass first-semester Fire & Rescue I to be eligible for Fire & Rescue II. Program completion in one year.)

This course primarily focuses on firefighting. Students are introduced to the equipment and procedures necessary to fight live fires, operate in simulated hazardous-materials incidents, and conduct search-and-rescue operations. Students react to multi-faceted situations (e.g., simulated terrorism, accidents, and natural disasters) as part of an emergency-response team. Students become familiar with emerging technologies such as communications software (e.g., dispatch systems, GIS, mapping systems, incident reporting, and simulation programs), multimedia inputs, thermal imaging cameras, and hazardous gas detectors. This course challenges students academically, mentally, and physically. All skills days are mandatory, including some weekends. **Certifications: Firefighter I, Firefighter II, CPR/First Aid, and Hazardous Materials Operations**

Health Careers – Nurse Aide

1 credit | Grade Level: 11–12 | Prerequisite: Completion of Biology I with a final grade of "C" or higher required.
(Course meets daily; program completion in one year.)

Nurse Aide is a comprehensive occupational training course that focuses on human body systems and common diseases. Students are prepared for advanced clinical care of patients in medical-surgical, rehabilitative, and community health settings. Students receive skills training in patient care, safety, and infection control, and hands-on clinical experiences in a healthcare setting that include patient–nurse aide communication and professionalism, measuring and recording vital signs, cardiopulmonary resuscitation, and proper documentation. Work-based learning in a healthcare facility is a required component of the course, and students must maintain American Heart Association Cardiopulmonary Resuscitation (CPR) and Emergency Cardiovascular Care (ECC) training during the course. This course requires students to meet Virginia Board of Nursing required clock hours to be eligible to take the National Nurse Aide Assessment Program (NNAAP) exam. For students to be considered graduates of any approved program, the program must be completed in entirety, including both classroom and clinical portions. Clinical must include a minimum of 40 hours of direct client care. Hours of

observation shall not be included in the required clinical hours. Simulation or lab does not count as direct client care clinical experiences.

Medication Aide

1 credit | Grade Level: 11–12
(Concurrent course with Health Careers – Nurse Aide)

This course is designed to provide students with the basic skills and knowledge to begin work as a medication aide. Upon successful completion, students will be able to prepare for the safe administration of medications to clients in assisted living facilities, maintain aseptic conditions, understand basic pharmacology, facilitate client self-administration or assist with medication administration, follow proper procedures for preparing, administering, and maintaining medications, and complete required documentation and reporting to licensed healthcare professionals. Coursework and clinical experiences fulfill the requirements of the Virginia Board of Nursing (VBON) Medication Aide Program. For students to be considered graduates of any approved program, the program must be completed in entirety, including both classroom and clinical portions. Clinical must include a minimum of 20 hours of supervised skills practice in medication administration to residents of an assisted living facility. Hours of observation shall not be included. Upon successful completion, students will be eligible to apply to take the Virginia **Department of Health Professions Registered Medication Aide Examination.**

MTC Technology Courses

Architecture and Interior Design I (Drafting I)

1 Credit | Grades 10–12 | No Prerequisite
Whether you are preparing for a job after high school or you are college-bound, this program prepares you for a professional path of drafting and design for careers in architecture, engineering, construction, estimating and interior design. You learn through hands-on projects that train you for CAD (Computer Aided Design) and reading construction plans. Projects include: drawing floor plans, building house models, creating landscape plans, and designing interiors.

Architecture and Interior Design II (Drafting II)

2 Credits | Grades 11–12 | Prerequisite: Drafting I
Students master the skills needed to produce complete and accurate drawings based on the ideas of engineers, architects, and designers. Using 3D AutoCAD, students will be assigned a business and client, create a full set of working house plans, refinish furniture, plan a subdivision, study color, and construct a 1⁄4” scale model of their project. At the completion of

this course, you will have a professional portfolio of your projects and your own website to share with employers and colleges. Computer programs will include AutoCAD Architecture, Microsoft Excel & Word, and Adobe Photoshop. **Certification: Portfolio-Based Assessment.**

Architecture and Interior Design III (Drafting III)

2 Credits | Grade 12 | Prerequisite: Drafting II
Students work independently on projects, and can participate in on-the-job experiences. They work with the instructor and choose projects from the design field of their choice and can work with real clients. Students will complete this course with a more comprehensive portfolio showing their personal strengths from all projects collected during their 3 years of class, useful for job and college applications. Computer programs may include Sketchbook and AutoCAD Architecture.

MTC Trade & Industrial Education

Aviation Maintenance Technology I

2 credits | Grade Level: 10–12

Students will learn the fundamentals of using basic aircraft sheet metal tools and the procedures used while working on aircraft. Reading technical plans, following directions and FAA aircraft guidelines and requirements will be taught while students assist in the construction of a full-size Light Sport Aircraft. Course requires use of basic math, physics and safety procedures to be followed.

Aviation Maintenance Technology II

2 credits | Grade Level: 11–12 | Prerequisite: Aviation Maintenance Technology I

Students add to their existing knowledge of aircraft construction techniques, learn the basics of aircraft power plant operation and installation, fundamental electronics, and aviation installation. Students will gain in-depth instruction on aerodynamics and the physics of flight. Mechanical drawings, reading and following detailed instruction will be stressed. Students will continue to assist in the construction of the full size light sport category.

Automotive Technology I

1 credit | Grade Level: 10–12

In this first course of the three-course program, students learn all aspects of repair, safety, and customer service by concentrating on three of the primary ASE Education Foundation and areas for certification, MLR-G1, part I, Auto Maintenance and Light Repair G1, part 1, Engine Repair and Electrical/Electronics). Emphasis will be placed on Motor Vehicle Safety Inspection Licensure. Students who successfully complete this portion of the program will be prepared to take and pass the respective ASE/NATEF exam and will be prepared for postsecondary education opportunities.

Automotive Technology II

2 credits | Grade Level: 11–12 | Prerequisite: Automotive Technology I

In this second course of the three-course program, students learn all aspects of repair, safety, and customer service by concentrating on the primary areas of certification, MLR-G1, part II, Brakes, Suspension and Steering, and Engine Performance). Students who successfully complete this portion of the program will be prepared to take and pass the respective ASE/NATEF exam and will be prepared for work and postsecondary education opportunities. Emphasis will be placed on Motor Vehicle Safety Inspection Licensure. **Certification Available: ASE Entry-Level Certification**

Automotive Technology III

2 credits | Grade Level: 12 | Prerequisite: Automotive Technology II and teacher recommendation

In this capstone course of the three-course program, students master all aspects of repair, safety, and customer service by concentrating on the remaining tasks from the four primary ASE/NATEF areas for certification. Manual Drivetrains, Automatic Transmissions and Transaxles, HVAC, and Diesel Engine). Emphasis will be placed on Motor Vehicle Safety Inspection Licensure. Students who successfully complete this program will be prepared to take and pass the respective ASE Entry-Level Certification exam and will be prepared for work and postsecondary education opportunities.

Building Management I

1 Credit | Grade Level: 10-12

In Building Management I, students obtain the knowledge and skills to perform the upkeep of commercial and public buildings and grounds through hands-on training in cleaning operations, building repairs, electrical, plumbing, and grounds maintenance. Students completing this program will build or repair residential structures, using a variety of materials and tools. This course is designed for students wanting to explore different construction fields over a two-year

period. Building Management is available for students based on recommendations from case managers and school personnel.

Building Management II

2 Credits | Grade Level: 11-12

In Building Management II, experienced students continue to obtain the knowledge and skills to perform the upkeep of commercial and public buildings and grounds through hands-on training. Students completing this program will build or repair residential structures. Basic projects will include wood and metal work, plumbing, industrial cleaning, building repairs, tiling, painting, landscaping, and masonry. This course is designed for students wanting to explore different construction fields over a two-year period. Students are expected to obtain employment by the completion of the course. Building Management is available for students based on recommendations by the school personnel.

Carpentry I

1 credit | Grade Level: 10–12

Carpentry I introduces students to skills essential to success in the profession. Students use hand and power tools to cut stock and learn to read blueprints. They will build and install foundations, trusses, doors, windows, stairs, and finishes. In this class, students will also frame walls, floors, ceilings, roofs, decks, and porches.

Carpentry II

2 credits | Grade Level: 11–12 | Prerequisite: Carpentry I

Carpentry II completes students' secondary training for the carpentry profession. Students study blueprints and build and install foundations, trusses, doors, windows, stairs, and finishes. They will also frame walls, floors, ceilings, roofs, decks, and porches. Second year carpentry students work together as a team each year to build a full sized house. In addition, students are introduced to basic rigging, and learn to estimate and select building materials. **Certifications: OSHA10, NOCTI.**

Carpentry III

2 credits | Grade Level: 12 | Prerequisite: Carpentry II and teacher recommendation

Carpentry III is an advanced course that allows students to gain in- depth knowledge and hands-on experience in construction industry skills. Work-based learning methods of instruction for this course would provide the student with practical, on-the-job experience in addition to what he or she has already mastered in Carpentry I and II. Additional exploration of the carpentry profession and postsecondary options for continuing education and professional opportunities are also emphasized.

Collision Repair I

1 Credit | Grades 10–12 | No Prerequisite

This program provides instruction in the collision repair process which includes non-structural analysis and damage repair; painting and refinishing; structural 47 analysis and damage repair; and mechanical and electrical components. Students will analyze all types of body damage and then restore vehicles to their original appearance. Emphasis is placed on repairing the vehicle to pre-accident condition according to the latest I-CAR standards.

Collision Repair II

2 Credits | Grades 11–12 | Prerequisite: Collision Repair I

In this course, students are taught to repair, mask, and refinish auto body components and entire vehicles. In addition, they use spray guns and personal safety equipment while applying undercoats and topcoats, working with a variety of materials, and gaining career skills. Students who successfully complete this program sequence will be prepared to take and pass the respective NOCTI certifications and will be prepared for postsecondary education opportunities.**Certifications: ASE in Non-Structural, Structural, Refinishing, Mechanical & Electrical; I-CAR Pro Level 1 in Refinishing and Non-Structural.**

Collision Repair III

2 Credits | Grade 12 | Prerequisite: Collision Repair II & Teacher Recommendation

This course allows students to further apply the tasks/competencies learned in Collision Repair I and II. This course may also be used as a capstone course in which students may perfect their auto body skills and move toward employment in the industry. Students who successfully

complete this program sequence will be prepared to take and pass the respective ASE/NATEF exam and will be prepared for postsecondary education opportunities. Work Based Learning is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Cosmetology I

2 Credits | Grades 10–11 | No Prerequisite

Students attend this class every day. In this introductory course, students study hair, skin, and nails and their related care. Students are grounded in theory as they prepare to practice procedures in a clinical lab setting or classroom, using mannequins for manipulative skill practice. The first-year course emphasizes personal safety, professionalism, and sanitation and disinfection of equipment and facilities. Students develop skills in shampooing and conditioning hair, as well as styling and cutting hair. They are introduced to chemical texture services and develop skills in manicure and pedicure procedures. Reading skills are essential to this course as the textbook is at a 12th grade reading level.

Cosmetology II

2 Credits | Grades 11–12 | Prerequisite: Cosmetology I

In this advanced course, students build on their theoretical foundation of general sciences and practices in cosmetology to increase proficiency in hair cutting and styling on both mannequins and live models, with attention to professionalism, client consultation, safety, and infection control. Students are trained in safe chemical processes related to permanent waves, relaxers, soft-curl permanent waves, lightening, and coloring hair. Students are introduced to working with wigs and hair additions. In addition, students learn to care for skin, hands, and feet, developing experience in providing facials, manicures, pedicures, and nail enhancements. A business management unit focuses on managing the salon. Competency completion prepares the student for the Virginia State Licensing Exam. **Certifications: Virginia Cosmetology License, Portfolio-Based Assessment.**

Criminal Justice I

1 Credit · Grades 10–12 · No Prerequisite

Students are introduced to the legal foundations and processes, and the principles, techniques, and practices for exploring careers within the criminal justice system. Career Clusters and Pathways; Law, Public Safety, Corrections and Security, Correction Services, Emergency Management Services, Legal Services, Security and Protective Services. **Certifications: ICS-700, Basic First Aid & CPR.**

Criminal Justice II

2 Credits | Grades 11–12 | Prerequisite: Criminal Justice I

Students learn the legal foundations and processes, the principles, techniques, and practices for exploring careers within the criminal justice system, and the history of terrorism in the United States. Students combine classroom instruction and supervised, practical experience throughout the school year. Career Clusters and Pathways: Law, Public Safety, Corrections and Security, Correction Services, Emergency Management Services, Law Enforcement Services, Legal Services, Security and Protective Services.

Diesel Technology I

2 Credits | Grades 10–12 | No Prerequisite

Students receive basic instruction in general maintenance and overhaul of diesel equipment. Students learn to inspect, maintain, and repair tracks, wheels, brakes, operating controls, pneumatic and hydraulic systems, electrical circuitry, and engines.

Diesel Technology

2 Credits | Grades 11–12 | Prerequisite: Diesel Technology I

Students receive instruction in general maintenance and overhaul of diesel equipment. Students learn to inspect, maintain, and repair tracks, wheels, brakes, operating controls, pneumatic and hydraulic systems, electrical circuitry, and engines. In this program students will be provided

instruction in the five areas on which ASE heavy-duty truck certification tests are based. Students practice welding and brazing techniques. **Certification: Automotive Service Excellence (ASE) – Heavy Duty.**

Electricity I

1 Credit | Grades 10–12 | No Prerequisite
Students develop skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. They also study electrical theory, navigate the National Electrical Code Book, select and install conductors, and work with panel boards, switchboards, and generators.

Electricity II

2 Credits | Grades 11–12 | Prerequisite: Electricity I
Students continue to develop skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. Students combine classroom instruction and supervised on-the-job training at MTC. **Certifications: NOCTI, OSHA 10.**

Electricity III

2 Credits | Grade 12 | Prerequisite: Electricity II & Approved WBL Employment

This class is designed for students who are wanting a career in the electrical field and have received approval for MTC Work-Based Learning. Students continue to develop skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. They also study electrical theory and mathematical problems related to electricity, navigate the National Electrical Code Book, select and install conductors, examine lighting, communication, and power systems, and work with conduit and raceways, panel boards, switchboards, grounding systems, and generators. Students may combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Heating and Air Conditioning I

1 Credit | Grades 10–12 | No Prerequisite

This instructional program prepares students to install, repair, and maintain the operating conditions of heating, air conditioning, and refrigeration systems. Students work with piping and tubing, study heat and electricity, install duct systems, and comply with EPA regulations. Completion of this sequence may prepare students for a number of certification exams, helpful for employment in a variety of HVAC occupations.

Heating and Air Conditioning II

2 Credits | Grades 11–12 | Prerequisite: Heating and Air Conditioning I

This instructional program prepares students for more advanced install, repair, and maintenance of operating conditions of heating systems. Areas of course work includes pipefitting, brazing, electrical and electronic controls, refrigeration theory, troubleshooting, equipment selection, duct design, combustion systems and selection and use of tools. **Certifications: OSHA 10, EPA 608 Universal.**

Welding I

1 credit | Grade Level: 10–12

Welding is required by a wide variety of industries, anywhere fusible materials and high heat are needed to manufacture, repair, or alter tools and products. Professional welders are in high demand and can earn accordingly. Students in Welding I are taught to use manual welding, cutting, and electric arc welding processes to fabricate and weld metal parts according to diagrams, blueprints, and specifications.

Welding II

2 credits | Grade Level: 11–12 | Prerequisite: Welding I.

This course teaches advanced welding students to fine-tune their craft and to perform V-groove welds in all positions, using multiple welding processes. Students prepare to pass relevant industry certifications. Welding is required by a wide variety of industries, anywhere fusible

materials and high heat are needed to manufacture, repair, or alter products. Professional welders are in high-demand and can earn accordingly. **Certifications Available: AWS (Pipe and Plate)**

Welding III

2 credits | Grade Level: 12 | Prerequisite: Welding II and teacher recommendation.

This course in welding teaches the industry's emerging technologies, including exotic metals and their applications, and how to master gas tungsten arc welding (GTAW) and shielded metal arc welding (SMAW) pipe tests. Students are prepared to earn relevant industry credentials toward employment in production or manufacturing facilities.

Massanutten Regional Governor's School

The Massanutten Regional Governor's School (MRGS) serves gifted and highly motivated juniors and seniors through an interdisciplinary, problem-based curriculum integrating science, mathematics, English, agriculture, and environmental studies. The program:

- Provides **9–10 total high school credits over two years**
- Emphasizes **advanced academic rigor** and **technology integration**
- Issues its own report cards every 9 weeks (grades transferred to home high school each semester)
- Allows opportunities for **dual enrollment**
- Requires **community-based projects** and interdisciplinary learning
- Uses **problem-based learning** in at least 50% of lessons
- Encourages students to apply for admission through their school counselor

Courses weighted according to RCPS policy include:
English Language & Composition, English Literature, and Calculus Environmental Science II, Statistics,

English Language and Composition GovSch (G 1196 A)

1 Credit · Grades 11–12 · Prerequisite: Admission to MRGS
Students develop critical thinking and academic writing skills. First semester emphasizes writing process skills including topic refinement, idea development, evaluation of sources, research integration, and revision for style and usage. Writing focuses on exposition, argumentation, and at least one researched essay of non-fiction.
Second semester builds college-level writing through critical essays, rhetoric, argumentation, and research. Students evaluate and integrate sources and refine editing and documentation skills.

English Literature and Composition GovSch (G 1195 A)

1 Credit · Grades 11–12 · Prerequisite: Admission to MRGS
Students read major literary works from early world literature through contemporary texts. Coursework includes literary analysis from artistic, cultural, and historical perspectives; research-based literary criticism; and formal written and oral presentations. Units include literature of the Anglo-Saxon, Medieval, Renaissance, Restoration, Romantic, Victorian, and Modern periods.

Calculus GovSch (G 3177 AD)

1 Credit · Grades 11–12 · Prerequisite: Admission to MRGS
This course covers analytic geometry and calculus of algebraic and transcendental functions. Major topics include limits, derivatives, differentials, parametric and polar graphing, definite and indefinite integrals, and integration methods with applications. Course content aligns with first-semester college calculus.

Statistics GovSch (G 3190 A)

1 Credit · Grades 11–12 · Prerequisite: Admission to MRGS
Students study descriptive statistics and statistical inference. Topics include data exploration, sampling, experimental design, probability models, confidence intervals, hypothesis testing, and contextual interpretation. Students use calculators and software for advanced data analysis, model evaluation, and simulations. Emphasis is placed on statistical vocabulary and communication.

Agro-Ecology I GovSch (G 8046)

1 Credit · Grades 11–12 · Prerequisite: Admission to MRGS
Students study natural resources, conservation, and environmental management including water, soil, forests, plants, and wildlife. Topics integrate ecological, economic, agricultural, and environmental perspectives. Students engage in hands-on projects, apply communication skills, explore decision-making impacts, and connect Agro-Ecology with Environmental Science concepts.

Agro-Ecology II GovSch (G 8047)

1 Credit · Grades 11–12 · Prerequisite: Agro-Ecology I
Students examine issues in sustainable agriculture and environmental policy including land use, water quality, climate change, and public programs. Coursework builds leadership, teamwork, conflict resolution, and communication skills. Students learn to apply shared leadership roles in group problem solving and analyze challenges in collaborative environments.

Environmental Science I GovSch (G 4270 D)

1 Credit · Grades 11–12 · Prerequisite: Admission to MRGS
This interdisciplinary Earth science course explores geology, meteorology, oceanography, and astronomy. Emphasis is placed on geologic processes, their environmental impacts, and scientific inquiry. Students investigate Earth systems through hands-on and analytical activities.

Environmental Science II GovSch (G 4270 AD) Sustainable & Renewable Technologies

1 Credit · Grades 11–12 · Prerequisite: Environmental Science I GovSch
Students study human–environment interactions, environmental hazards, sustainable energy solutions, and evaluation of environmental risks. Coursework includes scientific principles, modeling, problem solving, and proposal of preventive or corrective environmental solutions.

Research GovSch (G 9803 H)

½ or 1 Credit · Grades 11–12 · Prerequisite: Admission to MRGS
Students develop research skills grounded in the scientific method. They design and conduct a year-long research project, analyze data, and communicate results through written, visual, and oral formats. Each student is paired with a community mentor for a short- or long-term professional mentorship experience.
Credit earned depends on completed mentorship hours:

- **0.5 credit:** 70 mentorship hours
- **1 credit:** 140 mentorship hours