

# COURSE DESCRIPTIONS

*Not every course is available every year*

## Agriculture, Food and Natural Resources

\*Horticulture Science

\*Veterinary and Animal Science

### AgriScience

This is an introductory laboratory science course that prepares students for biology, subsequent science and agriculture courses, and postsecondary study. This course helps students understand the important role that agricultural science and technology serves in the 21<sup>st</sup> century.

**Principles of Plant Science and Hydroculture** focuses on essential knowledge and skills related to the science of plant growth. This course covers principles of plant health, growth, reproduction, and biotechnology, as well as fundamental principles of hydroponics and aquaponics. Upon completion of this course, proficient students will be prepared for more advanced coursework in horticulture science.

**Greenhouse Management** is an applied-knowledge course designed to prepare students to manage greenhouse operations. This course covers principles of greenhouse structures, plant health and growth, growing media, greenhouse crop selection and propagation, and management techniques. Upon completion of this course, proficient students will be equipped with the technical knowledge and skills needed to prepare for further education and careers in horticulture production. Greenhouse Management is a dual credit course with statewide articulation.

### **Small Animal Science (Vet 1)**

is an intermediate course in animal science and care for students interested in learning more about becoming a veterinarian, vet tech, vet assistant, or pursuing a variety of scientific, health, or agriculture professions. This course covers anatomy and physiological systems of different groups of small animals, as well as careers, leadership, and history of the industry. Upon completion of this course, proficient students will be prepared for more advanced coursework in veterinary and animal science.

### **Large Animal Science (Vet 2)**

is an applied course in veterinary and animal science for students interested in learning more about becoming a veterinarian, vet tech, vet assistant, or pursuing a variety of scientific, health, or agriculture professions. This course covers anatomy and physiological systems of different groups of large animals, as well as careers, leadership, and history of the industry. Upon completion of this course, proficient students will be prepared for success in the level-four Veterinary Science course and further postsecondary training.

### **Veterinary Science (Vet 3)**

is an advanced course in animal science and care for students interested in learning more about becoming a veterinarian, vet tech, vet assistant, or pursuing a variety of scientific, health, or agriculture professions. This course covers principles of health and disease, basic animal care and nursing, clinical and laboratory procedures, and additional industry-related career and leadership knowledge and skills. Upon completion of this course, students will be able to pursue advanced study of veterinary science at a postsecondary institution.

**Applied Environmental Science** focuses on the knowledge, information, and skills related to the fundamental science and management of ecosystems as well as careers, leadership, and history of the industry. This course covers principles of environmental impacts, energy consumption, and ecosystem management. Upon completion of this course, proficient students will be prepared for advanced coursework in the Environmental and Natural Resources program of study.

### **Landscape and Turf Management**

***Prerequisite: AgriScience***

This course is designed to provide challenging academic standards and relevant technical knowledge and skills needed for further education and careers in landscape design, maintenance and turf management. Content includes site analysis and planning, principles of design, and plant selection and care techniques.

### **State Dual Credit Plant and Soil Science**

Plant and Soil Science is an applied-knowledge course focusing on the science and management of plants and soils, with special attention given to current agricultural practices that support the healthy and sustainable cultivation of major crops. Upon completion of this course, proficient students will have been exposed to a range of careers associated with the science and management of plants and soils and will have developed the essential skills and knowledge to be successful in science- or agriculture-related occupations. \*\*students take a challenge exam at the end of the course for potential TN college credit

### **Supervised Agricultural Experience**

Is a structured experiential learning opportunity that takes place in a setting outside of regular school hours. SAEs allow students to experience the diversity of agricultural-related career pathways. SAEs require a documented formal project scope, accurate recordkeeping, and a student advisor supervision.

Work-based learning (WBL) is a proactive approach to bridging the gap between high school and high-demand, high-skill careers in Tennessee. Students build on classroom-based instruction to develop employability skills that prepare them for success in postsecondary education and future careers. Through experiences like internships, apprenticeships, and paid work experience, juniors and seniors (16 years or older) may earn high school credit for capstone WBL experiences. WBL coordinators are educators who are trained and certified by the department to coordinate these WBL experiences for students.

## **Business Management and Administration**

**\*Business Management**

### **Introduction to Business and Marketing**

is an introductory course designed to give students an overview of the Business Management and Administration, Marketing, and Finance career clusters. The course helps students prepare for the growing complexities of the business world by examining basic principles of business, marketing, and finance in addition to exploring key aspects of leadership, ethical and social responsibilities, and careers. Students' academic skills in communications, mathematics, and economics are reinforced with activities modeled in the context of business topics. Upon completion of this course, proficient students will be equipped with the foundational skills to succeed in any of the Business, Marketing, or Finance programs of study and will be prepared to make an informed decision regarding which pathways they would like to pursue in high school.

### **Business Communications**

is a course designed to develop students' effective oral and electronic business communications skills. This course develops skills in multiple methods of communications, including social media, as well as electronic publishing, design, layout, composition, and video conferencing. Upon completion of this course, proficient students will be able to demonstrate Page 2 successful styles and methods for professional business communications using the proper tools to deliver effective publications and presentations

### **Business Management**

focuses on the development of the planning, organizing, leading, and controlling functions required for the production and delivery of goods and services. This applied knowledge course addresses the management role of utilizing the businesses' resources of employees, equipment, and capital to achieve an organization's goals. Students will participate in a continuing project throughout the course in which, individually or in teams, they will present recommendations to improve an existing business. Local business partnerships are encouraged to provide resources for faculty and students. Upon completion of this course, proficient students will Page 2 be able to complete a full review of an existing business and offer recommendations for improvement as would a management consultant.

### **Social Media and Analytics**

Social Media Marketing & Analytics is a study of concepts and principles used in social media marketing. Students will examine the uses, marketing strategies, and data generated by social media marketing. Subject matter includes foundational social media knowledge, social media marketing strategies, communication, and ethical responsibilities.

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## **Fine Arts**

### **Art 1**

In this class, students will learn about the elements and principles of art, the history of art, proper usage of art materials, and contemporary approaches to art making. They will use this to make their own projects across a wide variety of materials including painting, drawing and sculpture. Personal expression and problem solving skills are equally emphasized in this class.

### **Art 2**

#### ***Prerequisite: Art 1***

In this class, students will learn about the elements and principles of art, the history of art, proper usage of art materials, and contemporary approaches to art making. They will use this to make their own projects across a wide variety of materials including painting, drawing and sculpture. Personal expression and problem solving skills are equally emphasized in this class. Art 2 differs from Art1 in that students are given more responsibility for developing their own style, content, and personal approaches for making art work.

### **Art 3: Mixed Media Art**

#### ***Prerequisite: Art 1 & Art 2***

This class is for the advanced student and has a prerequisite of Art1 and Art2. We will focus on mixed media artwork, or artwork that crosses the boundaries of different disciplines and seeks to fuse them into something unique and unexpected. Students will make their own projects across a wide variety of materials including painting, drawing and sculpture. Personal

expression and problem solving skills are emphasized in this class. Students are given more responsibility for developing their own style, content, and personal approaches for making art work. We will also discuss preparing a portfolio of work for college applications.

### **Concert Choir:**

The Concert Choir is a yearlong, introductory choral group at HHS. The curriculum focuses on basic musical concepts such as performance technique, tone production, score reading, basic music theory, and performance of three-part literature. Concert Choir is a prerequisite for the Advanced ACappella Choir.

### **Advanced Choir:**

The HHS Advanced Choir is open to students who have completed one year of Concert Choir. The Advanced Choir performs four-part a cappella (unaccompanied) music using advanced performance and score reading techniques. Audition or director approval required.

### **Musical Theater/Show Choir**

The HHS Show Choir is a performance group for students who want to perform unaccompanied arrangements of contemporary popular music. The curriculum model is predominately student-led and involves music learning “by ear.” The choral style performed is similar to that of popular FOX television show “Glee.”

### **Theatre Arts 1:**

Theatre Arts 1 is a semester-long course that teaches theatre arts history, basic acting techniques, stage direction, prop and set basics, and play analysis.

### **Theatre Arts 2**

***Pre-requisite to Theatre Arts 2.*** Theatre Arts 2 utilizes knowledge gained in Theatre Arts 1 to produce and perform a theatrical production in the spring semester. Concepts used include costume, lighting, and set design as well as theatrical performance and production techniques.

### **Strings**

This is a yearlong class with outside commitments that are required. Students must already know how to play an instrument and be able to read music.

### **Marching Band**

Fall semester only, has a summer band camp component, required students to be able to march while playing an instrument. There are fees that are attached to this class along with outside school requirements including Saturday competitions.

### **Concert Band**

Spring semester, students must know how to play an instrument and attend after school/evening commitments.

### **AP Music Theory**

\*\*taught on demand, when 10 or more students are willing to take it in the same year

### **AP Drawing and 2D Design**

## **Health Science**

**\*Therapeutic Services**

**\*Nursing Services**

**\*Sports and Human Performance**

### **Health Science Education**

Is an introductory course designed to prepare students to pursue careers in the fields of biotechnology research, therapeutics, health informatics, diagnostics, and support services. Upon completion of this course, a student proficient in *Health Science Education* will be able to identify careers in these fields, compare and contrast the features of healthcare systems, explain the legal and ethical ramifications of the healthcare setting, and begin to perform foundational healthcare skills.

### **Exercise Science**

is an applied course designed to prepare students to pursue careers in kinesiology and exercise physiology services. Upon completion of this course, proficient students will be able to apply concepts of anatomy and physiology, physics, chemistry, bioenergetics, and kinesiology to specific exercise science contexts. Through these connections students will understand the importance that exercise, nutrition, and rehabilitation play in athletes or patients with debilitating or acute metabolic, orthopedic, neurological, psychological, and cardiovascular disorders. In addition, students have the opportunity to incorporate communication, goal setting, and information collection skills in their coursework in preparation for future success in the workplace.

### **Diagnostic Medicine**

Diagnostic Medicine is a second or third level course designed to prepare students to pursue careers in the fields of diagnostic medical imaging, medical laboratory testing, optometry, and other patient diagnostic procedures. Upon completion of this course, proficient students will be able to describe new and evolving diagnostic technologies, compare and contrast the features of healthcare systems, explain the legal and ethical ramifications of the healthcare setting, and begin to perform foundational healthcare skills. In addition, students will continue to add artifacts to a portfolio, which they will continue to build throughout the program of study.

### **Medical Therapeutics**

#### ***Prerequisite: Health Science Education***

Is an applied course designed to prepare students to pursue careers in therapeutic services. Upon completion of this course, a proficient student will be able to identify careers in therapeutics services; assess, monitor, evaluate, and report patient/client health status; and identify the purpose and components of treatments. The student will incorporate communication, goal setting, and information collection skills to be successful in the workplace.

### **Medical Terminology**

#### ***Prerequisite: Health Science Education***

This class is designed to develop a working knowledge of the language of health professions. Students acquire word-building skills by learning prefixes, suffixes, roots, combining forms and abbreviations. Utilizing a body system approach, students will define, interpret, and pronounce medical terms relating to structure and function, pathology, diagnosis, clinical procedures, and pharmacology. Students will use problem solving techniques to assist in developing an understanding of course concepts.



### **Rehabilitation Careers**

is an applied course designed to prepare students to pursue careers in rehabilitation services. Upon completion of this course, a proficient student will be able to identify careers in rehabilitation services, recognize diseases, disorders or injuries related to rehabilitation services and correlate the related anatomy and physiology then develop a plan of treatment with appropriate modalities.

### **Dental Science**

is an applied course in the Therapeutic Services program of study intended to prepare students with an understanding of the roles and responsibilities of the dental health care professional within the application of dental care. Upon completion of this course, proficient students will be able to differentiate the many careers in dentistry, assess, monitor, evaluate, and report on the dental health of patients/clients and relate this information to overall health, apply appropriate dental terminology, and perform clinical supportive skills. In addition, students will continue to build a health science career portfolio that will follow them throughout their chosen program of study.

### **Nursing Education**

***Prerequisite: Health Science Education, Medical Therapeutics, Medical Terminology and/or Anatomy and Physiology***

This course will consist of 18 units of study dealing with direct bedside nursing care. Clinical experience will consist of supervised practice in the nursing home, as well as demonstrations in the classroom. Students can be registered by Tennessee Department of Health—after the completion of the course, 100 hours clinical and theory, passing a state test (both written and skills)—and will be job ready. Students may complete a clinical internship following the course.

### **Clinical Internship**

***Prerequisite: Health Science Education, Medical Therapeutics, Nursing Education and/or Rehabilitative Careers***

#### ***APPLICATION ONLY***

The internships will be completed in a hospital, nursing home, rehab center, medical office or other health care related facility.

Work-based learning (WBL) is a proactive approach to bridging the gap between high school and high-demand, high-skill careers in Tennessee. Students build on classroom-based instruction to develop employability skills that prepare them for success in postsecondary education and future careers. Through experiences like internships, apprenticeships, and paid work experience, juniors and seniors (16 years or older) may earn high

school credit for capstone WBL experiences. WBL coordinators are educators who are trained and certified by the department to coordinate these WBL experiences for students.\

## English and Language Arts

### English 9

This course reviews grammar concepts and emphasizes paragraph and essay development, focusing on using the writing process. Students study vocabulary as well as a selection of poetry, short stories, informational texts, and novels, including *Romeo and Juliet* by William Shakespeare and *Animal Farm* by George Orwell. Course evaluation is primarily standards based, and students will be required to do several oral and written presentations as well as complete research using MLA format.

All ninth graders will take the state end-of-course test that will count as their English 9 exam grade.

### Honors English 9

Students who select this course should show proficiency in their use of the English language. They should be highly motivated and serious in their approach to a variety of literature. They will complete the requirements of Standard English 9, as well as a more intense study of the other pieces of literature.

### English 10

This course is Common Core State Standards based, focusing on both fiction and non-fiction texts. The writing process is emphasized as students will analyze texts, form arguments, and evaluate aspects of literature while citing textual evidence to validate claims. Vocabulary study and review of the skills necessary for the EOC/PARCC exams are incorporated throughout the course. Evaluation is both performance and standards based.

All tenth graders will take the state end-of-course test that will count as their English 10 exam grade.

### Honors English 10

Students in this course should show proficiency in their use of the English Language. They should be highly motivated and serious in their approach and study to various pieces of literature, including an in depth study of *To Kill a Mockingbird* and *Julius Caesar*. This course will include everything that the English 10 course description requires with additional outside class reading, more intense writing assignments as well as individual and group class participation. A serious approach to the study of English is a must.

All tenth graders will take the state end-of-course test that will count as 25% of their English 10 grade.

### **English 11**

This course is Common Core State Standards based, focusing on American foundational literature that is both fiction and non-fiction based. The writing process is emphasized as students will analyze texts, form arguments, and evaluate aspects of literature while citing textual evidence to validate claims. All students will take the TCAP writing exam which requires a written response to a piece of text with emphasis on citing evidence for support. Vocabulary study and review of the skills necessary for the EOC/PARCC exams are incorporated throughout the course. Evaluation is both performance and test-based.

### **Honors English 11**

Students in this course should show proficiency in their use of the English language. They should be highly motivated and serious in their approach and study of varied pieces of literature. The course will include everything that the English 11 course description requires, with additional reading and more intense writing assignments. All students will also take the TCAP writing assessment and the EOC/PARCC exam.

### **AP Language and Composition\***

Advanced Placement English Literature and Composition is designed to provide students with the intellectual challenges and workload of a typical undergraduate university English literature and composition course. This is a yearlong course which engages students in becoming skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts and in becoming skilled writers who compose for a variety of purposes. Students will write in a variety of forms – narrative, exploratory, argumentative – and on a variety of subjects. While the reading selections are predominantly American literature, world literature is also incorporated. Students will be responsible for vocabulary study, independent reading, and research projects. All students will also take the TCAP writing assessment and the EOC/PARCC exam.

*\*The \$94.00 fee for the AP Exam must be paid prior to class start date.*

### **English 12**

This course is an in-depth study of British Literature. Throughout this course, students will study major literary topics and themes across the history of Britain dating back to the Anglo-Saxon period all the way up through the present day. Students will read, analyze and discuss major British authors with attention given to historical, religious and political influences. The writing component of this course reviews some of the basic writing and grammatical skills to better prepare students for college writing.

### **AP English Literature and Composition\***

Advanced Placement English Literature and Composition is designed to provide students with the intellectual challenges and workload of a typical undergraduate university English literature and composition course. This course complies with the

curricular requirements set forth by the AP English course description; therefore, this year-long class will be an intensive study of poetry, drama, and fiction of Britain, America, and the world. Students who enroll should be already proficient in the use of Standard English and should be willing to read widely and write extensively. In addition to reading widely, students will hone their writing skills through formal and informal writings. Students will focus on classic works of literature to approach different aspects of literary analysis. Student writings will include journals, timed in-class essays, and formal expository and argumentative essays, and literary analysis papers. Students may also do oral presentations. Additionally, students will study vocabulary and review the rudiments of grammar and mechanics as necessary.

*\*The \$94.00 fee for the AP Exam must be paid prior to class start date.*

### **Creative Writing**

This is a writing course which serves as an elective. This course is designed for a student who wants to improve his or her writing by trying a variety of techniques and approaches. Students will write narratives, “creative journalism,” and poetry. At the end of the semester each student will design a “masterpiece” project that will both interest and challenge the student. Students will keep a daily journal, which will be graded periodically. A typical week will consist of writing in class, exchanging or sharing ideas, reviewing grammar and writing techniques, and critiquing literature, both fiction and nonfiction.

### **Journalism (Yearbook Staff)**

***\*Prerequisite of a 2.5 grade point average or written teacher references***

Each participant is taught the basics of layout and design. After several sessions, participants are expected to be able to design and format a double-page spread. Criteria used for judging include: creativity, ability to follow instructions for design, writing copy and organizational skills. Grades are based on four basic skills: writing, layout, ad sales, and photography. Each student will be expected to sell ads, to adhere to major deadlines, to be available to cover after-school events, and to follow basic journalism rules.

## **Mathematics**

### **Algebra I (Honors)**

This course includes the use of the language of algebra, operations with real numbers, solutions of linear equations, problem solving, computations with polynomials, factoring polynomials, performing operations with algebraic fractions, solving expressions containing radicals, and solving quadratic equations. Topics also include solving systems of equations, computations with monomials and polynomials, solving quadratic equations/ inequalities, graphing quadratic equations/ inequalities, solving rational expressions, exponential functions, simplifying radicals, and solving radical equations.

### **Geometry (Honors)**

This course offers the student and opportunity to learn the fundamental skills of Euclidian geometry through non-coordinate, coordinate, and transformational geometry. It continues and reinforces the algebraic skills. Deductive and inductive reasoning skills are developed and the formation of logical ideas, methods, and proofs are explored. Emphasis is placed on inductive reasoning skills. Students will use TI 83/84 graphing calculators.

### **Algebra 2 (Honors)**

Algebra 2 covers number systems (real and complex), relations and functions (including linear, quadratic, exponential, logarithmic, polynomial, rational, and trigonometric functions), solving equations and inequalities, rational and radical expressions, and probability, statistics, and sequences and series. Emphasis is placed on problem solving skills and modeling real world scenarios with mathematics. TI-83/84 graphing calculators are used regularly.

### **SAILS**

(Seamless Alignment and Integrated Learning Support) introduces the college developmental math curriculum. By embedding it in the high school Bridge Math course, students can get a head start on their college career. Students are selected for the SAILS course on the basis of math ACT scores that indicate “less than college readiness for math.” Ordinarily, a college freshman would need to complete two developmental math classes in college (at a cost of over \$1000), earning no college credit for either one, simply to be allowed to advance to credit-earning college math classes. In partnership with Chattanooga State Community College, the Tennessee Board of Regents has approved a program that will allow students to meet developmental requirements by completing this specially designed online college course in high school. This will also fulfill the senior math graduation requirement.

### **Applied Mathematical Concepts**

Prerequisite: Algebra II

Applied Mathematical Concepts is a course for students who need their fourth math. The main goal of Applied Math is to put tools in the student's toolbox for their life outside of high school. We cover both Statistics for students going into college and Financial Math for any student whether they are headed to college or straight into the workforce. We also put an emphasis on presenting one's ideas in a professional manner for when they pursue their chosen careers.

### **Pre-Calculus**

Pre-calculus covers advanced algebra concepts relating to linear, exponential, logarithmic, rational, and polynomial functions and equations. Special attention is given to the study of trigonometric functions and equations, including their graphs and applications. Other topics include probability, conic sections, and sequences and series. TI-83/84 graphing calculators are used regularly

### **Statistics**

Statistics is an advanced math course which uses meaningful problems and appropriate technologies for statistical analysis and the development of interpretational skills. Students will use probability as a tool to make decisions, about data. The first quarter explores descriptive statistics; students learn how to organize, graph and categorize data and explore different ways to describe characteristics of data sets. The second quarter focuses more in inferential statistics and explores the role of statistics in our world through applications to a variety of fields. Technology, including TI-83/84 graphics calculators, will be used throughout the course to explore data.

### **Advanced Placement Calculus**

AP Calculus is an in-depth study of functions and their graphs, limits and functions, the derivative and applications of differentiation (extreme values, related rates, velocity, acceleration), the integral and applications of integration (differential equations, area, volume). Students taking AP Calculus may be able to earn college credit through the AP Calculus exam which is required at the end of the course. Graphing calculators are strongly recommended.

*The \$94.00 fee for the AP Exam must be paid upon enrollment in the course.*

## **Physical Education and Health**

### **Wellness**

The Wellness Curriculum is a course required for graduation. The Wellness Curriculum is made of seven strands that include mental health, disease and prevention and control, family relationships, drug abuse prevention, safety and first aid, fitness and nutrition. Students will be required to take two fitness tests with the last test being the final exam.

### **Physical Education 1**

### **Weight Training**

## **JROTC Program (Air Force)**

**ROTC 1** - This course is comprised of Aerospace Science (AS), Leadership Education (LE), Drill and Ceremonies, and Wellness. The Aerospace Science portion of the course is an aviation history course focusing on the development of flight throughout the centuries. It starts with ancient civilizations, then progresses through time to modern day. During the Leadership Education part of the course, the student is introduced to the Air Force Junior Reserve Officer Training Corps (AFJROTC) program. The course includes instruction on both the cadet and Air Force organizational structure; uniform wear; customs, courtesies, and other military traditions. The Drill and Ceremonies course is integrated in this course as part of Leadership Education. Cadets are provided fundamental and in-depth instruction in Air Force drill and ceremonies. Wellness is an official part of the Air Force Junior ROTC program. It is an exercise program focused upon individual base line improvements with the goal of achieving a national standard as calculated with age and gender.

**ROTC 2/3/4/5** – These courses are comprised of Aerospace Science, Leadership Education and Wellness. The subject of this course rotates every three years between Aerospace Science 200/220/300 and Leadership Education 200/300/400. A basic description of each course is provided in the Cadet Guide.

**ROTC 7** - This course is composed mainly of 3rd and 4th year Cadets. It is offered as a yearlong course for students who are responsible for managing the AFJROTC Cadet Corps. These Cadets are in various leadership positions within TN-081. AS 400 is a hands-on experience that affords Cadets the opportunity to put theories of previous leadership courses into practice. Planning, organizing, coordinating, directing, controlling, and decision-making will be done by Cadets. They will put into practice their communication, decision-making, personal- interaction, managerial, and organizational skills. Students apply

what they have learned to lead and manage the AFJROTC program. Staff Flight is taught as a stand-alone course if the following criteria are met: (1) students enrolled in a Staff-only class must be concurrently enrolled in a regular AS/LE class; (2) the Staff-only class must be recognized for graduation credit by the school; and (3) the Staff-only class does not count toward the AFJROTC Certificate of Completion.

**ROTC 8** – This course is comprised of Drill and Ceremonies and Wellness. It is offered as a part of Leadership Education. Drill Flight is taught as a stand-alone course if the following criteria are met: (1) students enrolled in a drill-only class must be concurrently enrolled in a regular AS/LE class; (2) the drill-only class must be recognized for graduation credit by the school; and (3) the Drill-only class does not count toward the AFJROTC Certificate of Completion.

**ROTC 9** - This course consists of Leadership Development Requirements (LDR). It is offered as a part of Leadership Education. LDR Flight is taught as a stand-alone course if the following criteria are met: (1) students enrolled in a LDR-only class must be concurrently enrolled in a regular AS/LE class; (2) the LDR-only class must be recognized for graduation credit by the school; and (3) the LDR-only class does not count toward the AFJROTC Certificate of Completion.

**\*\*\*\*\*THESE CLASSES ARE EMBEDDED WITHIN THE COURSES ABOVE\*\*\*\*\***

#### **Aerospace Science 100: Milestones in Aviation History 2nd Ed**

Milestones in Aviation History is an aviation history course focusing on the development of flight throughout the centuries. It starts with ancient civilizations and flight, then progresses through time to future developments in aerospace, with an introduction into cyber technologies. The intent of this textbook is to bring alive the significant discoveries in flight a reality. This book tells the story of why we are so proud of our Air Force heritage—laying the foundation for future Air Force JROTC aerospace science courses. Throughout the course 21st century learning is adopted with readings, video clips, hands-on learner centered activities, and chapter project-based learning opportunities.

#### **Aerospace Science 200: The Science of Flight: A Gateway to New Horizons**

The Science of Flight: A Gateway to New Horizons is an introductory course and customized customized textbook that focuses on how airplanes fly, how weather conditions affect flight, flight, flight and the human body, and flight navigation. The course is designed to complement materials taught in math, physics, and other science-related courses and is aligned with the



National Science Education Standards, the Math Standards and Expectations, and ISTE National Educational Technology Standards for Students.

### **Aerospace Science 220: Cultural Studies: An Introduction to Global Awareness**

This is a customized course about the world's cultures. The course is specifically created for the US Army, Marine Corps, Navy, and Air Force Junior ROTC programs. It introduces students to the world's cultures through the study of world affairs, regional studies, and cultural awareness. The course delves into history, geography, religions, languages, culture, political systems, economics, social issues, environmental concerns, and human rights. It looks at major events and significant figures that have shaped each region. Throughout the course, there are readings, video segments, hands-on activities, other optional activities, technology enrichment, and assessments to guide in the reinforcement of the materials.

### **Aerospace Science 300: Exploring Space: The High Frontier**

This is a science course that includes the latest information available in space science and space exploration. The course begins with the study of the space environment from the earliest days of interest in astronomy and early ideas of the heavens, through the Renaissance, and on into modern astronomy. It provides an in-depth study of the Earth, Sun, stars, Moon, and solar system, including the terrestrial and the outer planets. It discusses issues critical to travel in the upper atmosphere such as orbits and trajectories unmanned satellites, and space probes. It investigates the importance of entering space and discusses manned and unmanned space flights, focusing on concepts surrounding spaceflight, space vehicles, launch systems, and space missions. The section on manned spaceflight focuses on the Space Shuttle, space stations and beyond, covering milestones in the endeavor to land on the Moon and to safely orbit humans and crafts for temporary and prolonged periods. The course covers the human aspect of spaceflight, focusing on the human experience in space. It also examines the latest advances in space technology, including robotics in space, the Mars Rover, and commercial uses of space.

### **Aerospace Science 400: Management of the Cadet Corps**

The cadets should be in a leadership position of managing cadet corps programs by their fourth year in the Air Force Junior ROTC program. Not every leadership position needs to be held by fourth year cadets and AS 400 is intended for 4th year cadets who hold corps management positions. However, if necessary due to low number of 4th year cadets, 3rd year cadets may be placed in corps management positions and enrolled in AS 400. AS 400 is not intended for cadets who do not hold corps management/leadership positions and instructors should ensure only those cadets holding corps

management/leadership positions are enrolled in the course. This hands-on experience affords cadets the opportunity to put theories of previous leadership courses into practice. Planning, organizing, coordinating, directing, controlling, and decision-making will be done by cadets. They will put into practice their communication, decision-making, personal-interaction, managerial, and organizational skills. Instructors should keep in mind that since there is no textbook for this course, the course syllabus will be structured so that cadets achieve course objectives by completing corps management activities.

### **Leadership Education 100: Traditions, Wellness, and Foundations of Citizenship**

Leadership Education 100 is the component of JROTC leadership education. It is intended for students who are entering the AFJROTC program and beginning their high school studies. It will introduce cadets to history, organization, mission, traditions, goals, and objectives of JROTC for all services. It introduces key military customs and courtesies, how to project a positive attitude, and examine the principles of ethical and moral behavior. It provides strategies for effective note taking and study skills for academic success. Lessons will cover how to be emotionally, mentally, and physically healthy. Avoiding and preventing violence in today's society will also be covered. How to recognize types of bullying and how to advocate for prevention of this type of behavior. It will cover healthy living, physical fitness, and how to make safe, drug-free, and responsible decisions. This textbook will also examine the negative effects of air and water pollution, and how to help keep the environment safe. Cadets will be introduced to civics and our national government, including a historical understanding of the American flag and other important national symbols. The final chapter will also cover how the US Constitution protects our rights and freedoms as American citizens.

### **Leadership Education 200: Communication, Awareness, and Leadership Second Edition**

Leadership Education 200: Communication, Awareness, and Leadership, Second Edition, is a customized course designed to improve communication, enhance awareness of self and others, and provide fundamentals of leadership and followership. The course focuses on the Air Force Junior Reserve Officer Training Corps (AFJROTC) mission to “develop citizens of character dedicated to serving their nation and community.” Woven throughout is the underlying theme of developing personal integrity. The course also emphasizes leadership and values such as service and excellence. This update incorporates 21st century teaching, learning, and skills of critical thinking, communication, collaboration, and creativity.

### **Leadership Education 300: Life Skills and Career Opportunities**

Life Skills and Career Opportunities, Second Edition provides an essential component of leadership education for today's high school students. This course is designed to prepare students for life after high school in the high-tech, globally oriented, and diverse workplace of the 21st century. Students will learn how to become a more confident financial planner and to save, invest, and spend money wisely, as well as how to avoid the credit trap. They will learn about real-life issues such as understanding contracts, leases, warranties, legal notices, personal bills, practical and money-saving strategies for grocery shopping, apartment selection, and life with roommates. The Holland Interest Inventory and other self-assessments will help them to reveal their attitudes, aptitudes, and personal skills. This self-understanding will allow them to explore career paths and understand requirements that they will need to be successful at work and in life.

#### **Leadership Education 400: Principles of Management**

This is the fourth textbook in the Leadership Education series. This course provides exposure to the fundamentals of management. The text contains many leadership topics that will benefit students as well as provide them with some of the necessary skills needed to put into practice what they have learned during their time in AFJROTC. We are confident this course, coupled with what cadets have already learned during their time in AFJROTC, will equip them with the qualities needed to serve in leadership positions within the corps. Throughout the text are many ethical dilemmas, case studies, and role play activities built into the lessons. These activities are based on real life experiences and will allow students the opportunity to practice what they learn by getting involved in discussions and expressing their opinions.

## **Science**

### **Environmental Science (Honors)**

Environmental Science is designed to present a study of the Earth's environment with a focus on sustainability and stewardship of our natural resources. Topics will include: Population and energy resource use, Ecosystem and global diversity, land use and soil, Agriculture, toxicology and risk assessment, Water and Air management, Pollution, Waste management, Climate change, and Environmental philosophy and ethics. Environmental Science is a science elective class.

### Anatomy and Physiology

Anatomy and Physiology is the study of the body's structures and respective functions at the molecular/biochemical, cellular, tissue, organ, systemic, and organism levels. Students explore the body through laboratory investigations, models, diagrams, and/or to comparative studies of the anatomy of other organisms. An additional laboratory fee applies due to the extensive dissection and laboratory requirements. The study of anatomy and physiology prepares students for a variety of pursuits such as health care, sports, and fitness careers, as well as for taking an active part in their own health and wellness. The student will study:

\*Anatomical orientation   \*Protection, support, and movement   \*Integration and regulation   \*Transportation  
\*Absorption and excretion   \*Reproduction, growth, and development (includes a unit on human sexuality and reproduction)

### Chemistry or Honors Chemistry

**Recommended pre-requisites:** Physical Science, Algebra I

Chemistry I is a *laboratory science course* in which students investigate the composition of matter and the physical and chemical changes it undergoes. Students use science process skills to study the fundamental structure of atoms, the way atoms combine to form compounds, and the interactions between matter and energy. Students explore chemistry concepts through an inquiry-based approach. Embedded standards for Inquiry, Mathematics, and Technology & Engineering are taught in the context of the content standards for Atomic Structure, Matter and Energy, and Interactions of Matter.

### Advanced Placement Chemistry

AP Chemistry is a course taught in high school to those students who desire a more rigorous laboratory chemistry education. Topics include thermochemistry, electrochemistry, equilibrium chemical bonding, atomic theory, reaction kinetics, and nuclear chemistry.

*The \$86.00 fee for the AP Exam must be paid prior to the class start date.*

### Physics

This course is an in-depth study in the following areas: one and two dimensional motion, mechanical energy, wave motion and sound, light and optics, magnetism, and electricity. Students will participate in a wide variety of laboratory experiences in order to develop their own models of various physical phenomena. In addition, students will also develop problem-solving skills and apply these skills to original problems.

### **Biology or Honors Biology**

#### **Recommended pre-requisites: Physical Science or Physical World Concepts**

Biology I is a *laboratory science course* that investigates the relationship between structure and function from molecules to organisms and systems, the interdependence and interactions of biotic and abiotic components of the environment, and mechanisms that maintain continuity and lead to changes in populations over time. Students explore biological concepts through an inquiry approach. Embedded standards for Inquiry, Technology & Engineering, and Mathematics are taught in the context of the content standards for Cells, Interdependence, Flow of Matter and Energy, Heredity, and Biodiversity and Change.

### **Advanced Placement Biology**

AP Biology is a year - long course that is designed to prepare students for the Advanced Placement Exam in Biology. The course is designed around the new AP Biology curriculum framework that focuses on the Big Ideas in biology and their connections. The curriculum provides a basis for students to develop strong conceptual understanding in biology and the opportunity to integrate that knowledge through inquiry-based activities and laboratory investigations. There is less memorization and more content depth. Reading skills are extremely important for the format of the new test. The AP Biology curriculum is structured around four Big Ideas: Evolution, Energy Processes, Information and Interactions. These ideas encompass the core principles and theories of all living systems. To master the concepts, students will learn through modes of: Tests, quizzes, labs, activities, video lectures, current event articles, and scientific journals.

## **Social Studies**

### **World History and Geography (Honors)**

Students will study the rise of the nation state in Europe, the French Revolution, and the economic and political roots of the modern world. They will examine the origins and consequences of the Industrial Revolution, nineteenth century political reform in Western Europe, and imperialism in Africa, Asia, and South America. They will explain the causes and consequences of the great military and economic events of the past century, including the World Wars, the Great Depression, the Cold War, and the Russian and Chinese Revolutions. Finally, students will study the rise of nationalism and the continuing persistence of political, ethnic, and religious conflict in many parts of the world. Relevant Tennessee connections will be part of the curriculum, as well as appropriate primary source documents. Students will explore geographic influences on history, with

attention given to political boundaries that developed with the evolution of nations from 1750 to the present and the subsequent human geographic issues that dominate the global community. Additionally, students will study aspects of technical geography such as GPS and GIS, and how these innovations continuously impact geopolitics in the contemporary world.

### **AP Modern World History**

AP World History: Modern is an **introductory college-level modern world history course**. Students cultivate their understanding of world history from c. 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. Students are expected to take the College Board AP Modern World History exam in May that may award college credit to those scoring high enough.

### **AP Human Geography**

AP Human Geography is an **introductory college-level human geography course**. Students cultivate their understanding of human geography through data and geographic analyses as they explore topics like patterns and spatial organization, human impacts and interactions with their environment, and spatial processes and societal changes. Students are expected to take the College Board AP Human Geography exam in May that may award college credit to those scoring high enough.

### **State Dual Credit American History (Honors)**

U. S. History is a survey of the history of the United States from the end of Reconstruction through the end of the 20<sup>th</sup> century. Special emphasis is placed on relating national and international events occurring in the 21<sup>st</sup> century to factors of causation that occurred in the 20<sup>th</sup> century. At the end of this course students will sit for an exam and will receive college credit to use at any TN College/University if they pass with a 70 or better.

### **U. S. History. Advanced Placement (APUSH)**

This course emphasizes critical analysis of important events, trends, and issues in U. S. history from the time of exploration and discovery to contemporary times. The aim of the course is to provide the student with a learning experience equivalent to that obtained in most college introductory U. S. history courses. Students are expected to take the College Board AP U.S. History exam in May that may award college credit to those scoring high enough.

### **Government (Honors)**

Government focuses on the creation of the Constitution and the development of our federal system of government. The structure and function of each of the three branches of government are explored. State and local governments are also explored. Throughout the course, emphasis is placed on the importance of the role of the individual as a vital component in maintaining our representative democracy.

### **Economics (Honors)**

Economics is a general survey of the American free-enterprise system. Concepts include scarcity and rational decision making, various types of economic systems, supply and demand theory, government intervention, and global economic issues.

### **Bible History**

Bible History is a course designed to acquaint students with the contents of the Old and New Testaments. The first term covers the history of Israel as found in the Old Testament; and the second term is a survey of the history of the New Testament. Students should gain understanding of the influence of the Bible in western culture, literature and religious beliefs. The first term is not a prerequisite for the second term but there is great benefit in having taken “old” before “new.”

### **State Dual Credit Psychology**

This course gives students an opportunity to explore human behavior in order to better understand themselves and others. Psychology focuses on growth, development, learning, behavior and the processes by which these components are measured. Students will compare and contrast various schools of thought and theories of psychology. They will apply psychological concepts, methods, and theories in analyzing how humans, think, learn, and feel. State dual credit offered to students who pass final SDC exam in May.

### **Sociology**

Students have an opportunity to engage in exploration devoted to the study of people and their lives in groups. Students will evaluate major social problems in terms of causes and consequences. They will also study the ways in which groups resist and accommodate change.

### **Capstone Experience** (11<sup>th</sup>-12<sup>th</sup> Grade)

Students may have the opportunity to assist as an aide for the office, library, counseling department, or a teacher.

### **Personal Finance** (9<sup>th</sup>-12<sup>th</sup> Grades)

This is a course designed to inform students how individual choices directly influence occupational goals and future earning potential. Real world topics covered include income, money management, spending, and credit, saving, and investing.

## **World Languages**

### **Spanish I** (10-12<sup>th</sup> Grades)

This introductory course covers basic grammar topics and vocabulary as well as idiomatic expressions. Verb tenses will cover all three regular verb categories and also some irregular verbs in the present indicative. The audio lingual method used emphasizes listening comprehension and an active use of the language by the student.



**Spanish II** (10<sup>th</sup>-12<sup>th</sup> Grades)

**Prerequisite: Spanish I**

This course builds upon the material covered in Spanish I. It broadens the vocabulary and deepens the ability to conjugate verbs in the present tense and introduces the imperfect and preterite tenses. Students will further develop their understanding of the spoken language by listening to tapes and interacting in class.

**Spanish III** (10<sup>th</sup>-12<sup>th</sup> Grades)

**Prerequisite: Spanish I & II**

Spanish III is a comprehensive course which stresses the usage of grammar, vocabulary, speaking, reading and writing skills developed in Spanish I and II. It elaborates on the preterite tenses and introduces commands and the present and imperfect subjunctive tenses. Students further develop their linguistic skills by use of tapes and selective readings on culture and literature.

**French I**

Students to begin to acquire proficiency in French through a linguistic, communicative, and cultural approach to language learning that fosters cross-cultural understanding. Emphasis is placed on the development of listening, speaking, reading, and writing skills and acquisition of the fundamentals of applied grammar.

**French II**

At level two, students will better develop their listening and speaking skills and increase vocabulary and develop reading comprehension and writing skills. Work will be done in class to improve students' pronunciation and intonation. Upon completion of level two, students will be able to speak and write about their lives in simple past and future tenses. They will read and react independently in various contexts to selections at an appropriate level. Further elements of culture are examined.

**French III**

Students will advance their oral and written communication skills in French from strings of sentences to paragraphs of both simple and complex sentences and some strings of paragraphs with emphasis on vocabulary acquisition and broadening their repertoire of grammatical structures with which to express themselves. Students will participate in oral presentations, class discussions, and write original compositions. Students are encouraged to do original thinking and to contribute to classroom

discussions. The following are some of the many concepts of which students should have mastery entering into level three as well as the new concepts and topics we will explore throughout the year.