

2026-2027 UPPER SCHOOL COURSE DESCRIPTIONS

FREDERICA ACADEMY



ADVANCED PLACEMENT & HONORS COURSE REGISTRATION REQUIREMENTS

ENGLISH DEPARTMENT			
Course	Prerequisite Course(s)	Minimum Grade	Additional Notes
AP Seminar	World Literature	90	
AP English Language & Composition	English Seminar	95	These courses require students to read and comprehend challenging texts.
	AP Seminar	90	
AP English Literature & Composition	American Literature	95	Students will read an average of 15 pages nightly and will be expected to discuss the texts in class.
	AP English Language & Composition	90	

MATH DEPARTMENT			
Course	Prerequisite Course(s)	Minimum Grade	Additional Notes
Honors Geometry	Algebra I (8th grade)	90	Rising 9th & 10th grade students who wish to enroll in Geometry and Algebra II simultaneously must have a minimum average of 98 in Algebra I and a teacher recommendation.
Honors Algebra II	Honors Geometry	90 Homework Average 90 Quiz Average 87 Test Average	
AP PreCalculus	Algebra II	98	
	Honors Algebra II	90 Homework Average + Quiz Average 87 Test Average	Students in Algebra II seeking enrollment in AP PreCalculus must have a 98 average and be recommended by their teacher. No exceptions will be made to this policy.
AP Calculus AB	AP PreCalculus	90 Homework Average 90 Quiz Average 87 Test Average	
AP Calculus BC (Junior Year)	AP PreCalculus	97 Score of 5 on AP PreCalculus Exam	
AP Statistics	Algebra II	87	Students who wish to enroll in AP Statistics as their senior Math course instead of AP Calculus BC must obtain permission from the Math Department Chair and Upper School Director.
	Honors Algebra II	85	

SCIENCE DEPARTMENT			
Course	Prerequisite Course(s)	Minimum Grade	Additional Notes
Honors Chemistry	Honors Geometry	85	Should space allow for sophomore entry into AP Biology, the following criteria is required: minimum average of 98 in Honors Biology; minimum composite score of 25 on PreACT.
	Algebra I or Geometry	92	
AP Biology	Biology & Chemistry	95	
	Honors Biology & Honors Chemistry	90	
AP Chemistry	Biology & Chemistry	95	
	Honors Biology & Honors Chemistry	90	
AP Physics I (Junior Year)	Algebra II	95	Honors Chemistry course enrollment will be shared by the instructor within the first 4.5 weeks of Biology.
	Honors Algebra II	90	
AP Physics I (Senior Year)	Algebra II	85	

SOCIAL SCIENCE DEPARTMENT			
Course	Prerequisite Course(s)	Minimum Grade	Additional Notes
AP World History: Modern	World History	90	
AP US History	World History	90	
	AP World History: Modern	82	
AP Comparative Government & Politics	World History or US History	90	
	AP World History or AP US History	85	
AP Macroeconomics	Honors Algebra II or Algebra II	85	
AP Microeconomics	Honors Algebra II or Algebra II	85	
AP US Government & Politics	World History or US History	90	
	AP World History or AP US History	80	

WORLD LANGUAGES DEPARTMENT			
Course	Prerequisite Course(s)	Minimum Grade	Additional Notes
Honors Spanish II	Spanish I (8th Grade)	93	
AP Spanish Language	Honors Spanish IV	87	
AP Latin	Latin III	90	

COMPUTER SCIENCE COURSES			
Course	Prerequisite Course(s)	Minimum Grade	Additional Notes
JavaScript II	JavaScript I	90	Honors JavaScript and Honors Python course enrollment will be shared by the instructor within the first 4.5 weeks of classes.
Artificial Intelligence Video Game Design	JavaScript II	90	
Python I	JavaScript I	90	
Python II	Python I	90	Engineering courses must be completed in the following sequence: • Introduction to Engineering • Intermediate Engineering • Advanced Engineering
AP Computer Science Principles	Algebra I JavaScript II	90	
AP Computer Science A	AP Computer Science Principles	90	

FINE ARTS COURSES			
Course	Prerequisite Course(s)	Requirements	Additional Notes
Art III	Art II	Art Teacher Recommendation	
AP 2-D Art	Art II	Portfolio and Art Teacher Recommendation	
Popular Music Ensemble	N/A	Placement into all Popular Music Ensemble classes is determined by a vocal and/or instrumental proficiency interview	

In addition to meeting the minimum grade for Advanced Placement and Honors course registration, students must receive a recommendation from their prerequisite course teacher.

Students who feel they are deserving of a waiver of the requirements above must meet with Upper School Administration and the prerequisite course teacher to discuss their request for a waiver. Administration reserves the right to deny waiver requests.

Transfer students may be asked to take a placement exam in order to ensure correct placement.

ENGLISH

ENGLISH CORE OFFERINGS

World Literature (Full Year)

Grade 9

In this course, freshmen will explore the human experience through texts from different time periods, cultures, and perspectives. During this journey into world literature, students will develop their ability to read and interpret the major literary genres including – but not limited to – prose, poetry, and drama. They will develop critical reading, writing, and discussion skills while engaging in creative and analytical assignments that enhance their appreciation of global voices. In addition to expanding their vocabulary and command of the conventions of standard English, students will conduct research and provide thoughtful responses to the literature they read in order to develop their persuasive verbal and written communication skills.

Students will develop the following skills throughout this course:

1. Participate effectively in a range of collaborative discussions about texts by listening respectfully and expressing ideas clearly.
2. Read, comprehend, and analyze a rich array of world literature to understand literary conventions for each genre and the broader cultural and historical contexts.
3. Produce clear, coherent writing that is appropriate for its purpose and intended audience.

English Seminar (Full Year)

Grade 10

English Seminar is a course designed to teach critical thinking and writing skills through the study of literature to sophomores. Students will be challenged to see the world through different lenses as we examine the common human struggles and experiences that bind us to one another. We will ask: How does one develop and define identity? How does one define personal truth? What happens when one is different from others? Where does one find power? What does it mean to be human? Students who opt-in to the honors-level course will be given additional assignments that require higher level thinking and synthesis skills as well as have higher expectations for both writing and participation in class discussions.

Students will develop the following skills throughout this course:

1. Effective Research Practices – Formulate focused research questions, locate and evaluate credible sources, and integrate evidence to support original arguments.
2. Clear and Cohesive Writing – Craft well-organized essays with strong thesis statements, logical structure, and clear connections between evidence and analysis.
3. Presentation and Communication – Develop and deliver clear, engaging presentations that effectively convey research findings while adapting tone and style for the intended audience.

AP Seminar (Full Year)

Grade 10

“AP Seminar is an interdisciplinary course that encourages students to demonstrate critical thinking, collaboration, and academic research skills on topics of the student’s choosing. To accommodate a wide range of student topics, typical college course equivalents interdisciplinary or general elective courses” (AP Seminar Course Overview).

During this inquiry-based sophomore level course, students will explore the complexities of both academic and real-world issues as they relate to multiple perspectives (cultural, social, artistic, philosophical, political, historical, environmental, scientific, and ethical). Students will be empowered with the skills necessary to research and analyze information in order to craft and communicate evidence-based arguments, while practicing ethical research, working collaboratively with a team, evaluating real-world and/or academic problems and issues, proposing solutions or resolutions, and defending arguments through multimedia presentations.

Students will develop the following skills throughout this course:

1. Research and Synthesis – Gather information from a variety of credible sources, evaluate their relevance and reliability, and synthesize multiple perspectives to develop well-rounded arguments.
2. Argumentation and Analysis – Construct and present logical, evidence-based arguments, analyzing the strengths and limitations of different viewpoints while maintaining a clear, persuasive line of reasoning.
3. Collaboration and Communication – Work effectively in teams to conduct research and present findings, while honing written and oral communication skills to convey complex ideas clearly and cohesively.

American Literature (Full Year)

Grade 11

Through nonfiction, novels, short fiction, poetry, and film from the 20th century, students will explore American Literature. The course asks a series of basic questions: What is an American? What are American responsibilities to nature? What are some of the important poems of the 20th and 21st century? How do some anchor text novels treat the idea of post WW2 America? The second important strand in the course is writing. Students will practice and be assessed on their writing for different audiences and purposes.

Students will develop the following skills throughout this course:

1. Critical Interpretation of American Identity – Analyze how 20th and 21st-century American literature explores themes of identity, responsibility, and the evolving definition of what it means to be an American.
2. Analytical and Reflective Writing – Craft thoughtful, well-supported essays that respond to literary texts, adapting writing style and tone for different audiences and purposes.

3. Contextual Analysis of Literature and Culture – Examine how historical and cultural contexts, particularly post-World War II, shape and are reflected in American novels, poetry, nonfiction, and film.

AP English Language and Composition (Full Year)

Grade 11

Students in the Advanced Placement English Language and Composition course encounter an eclectic range of nonfiction texts – including essays, letters, speeches, memoirs, and images – to deepen their understanding of rhetoric and how language works to construct persuasive arguments. This course “cultivates the reading and writing skills that students need for college success and for intellectually responsible civic engagement. The course guides students in becoming [or more likely, continuing to become] curious, critical, and responsive readers of [sic] diverse texts and becoming flexible, reflective writers of texts addressed to diverse audiences for diverse purposes. The reading and writing students do in the course should deepen and expand their understanding of how written language functions rhetorically: to communicate writers’ intentions and elicit readers’ responses in particular situations.” (“AP English Language and Composition Course,” 11).

Students will develop the following skills throughout this course:

1. Analyze the rhetorical choices writers make within particular rhetorical situations and adapt their own writing to best persuade an intended audience of their purpose and message
2. Analyze the claims and evidence in an argument and develop a sequence of logical claims and relevant, sufficient evidence in their own writing
3. Analyze the organization and methods of development in an argument and intentionally choose sound organizational patterns in their own writing
4. Analyze the specific stylistic choices writers make to appeal to an audience and make adept stylistic choices themselves in word choice, grammar/punctuation, and syntax.

Literature and Composition (Full Year)

Grade 12

Senior Composition and Literature is a college preparatory course designed to assure that students will be familiar with the learning goals and performance standards typical in the nation’s universities’ first year writing sequence. As such the two semesters match the typical college required writing sequence: the first focused on expository and persuasive writing, the second based on writing about literature through a genre based framework. The texts are drawn from a pool of highly diverse writers working within and responding to the Anglo-American literary tradition.

Students will develop the following skills throughout this course:

1. Critical thinking about the creation of valid arguments
2. Literary analysis of texts and response writing
3. Deep reading comprehension for latent and explicit meaning

AP English Literature and Composition (Full Year)

Grade 12

Using the AP English Literature and Composition Course and Exam Description as the curricular framework for the course, the class is “an introductory college-level literary analysis course. Students cultivate their understanding of literature through reading and analyzing texts as they explore concepts like character, setting, structure, perspective, figurative language, and literary analysis in the context of literary works” (AP Literature and Composition Course Overview). This rigorous course will challenge seniors to support interpretations, both in writing and in open class discussions, of various literary texts. Students will sharpen their critical thinking skills with complex text and hone the craft of writing through each part of the writing process. While students will complete some levels of test preparation, the primary objective of the course is to foster lifelong readers and critics of literature. Through literature, students explore worlds unlike their own, which enables them to develop empathy for different cultures, genders, ethnicities, religions, and nationalities and helps them better understand humanity and societies we create

Students will develop the following skills throughout this course:

1. Literary analysis and critical thinking
2. Effective communication and argumentation
3. Empathy and cultural understanding

ENGLISH

ENGLISH ELECTIVES

Introduction to Drama (Semester)

Grades 9-12

“All the world’s a stage,

And all the men and women merely players (Shakespeare’s Jaques in *As You Like It*).” This academic elective offers an in-depth exploration of drama as a literary form, examining how plays—ranging from classical tragedies and comedies to modern realism—both reflect and influence cultural and social contexts. Through close study of significant works from different historical periods, students will analyze the defining characteristics of drama and what sets it apart from other literary genres. Emphasizing critical reading, textual analysis, and the application of dramatic terminology, the course will deepen students’ understanding of how plays function on the page, in performance, and within their historical moments. **This course can also be taken to satisfy Frederica Academy’s half credit Fine Arts course requirement.**

Students will develop the following skills throughout this course:

1. Analyzing Dramatic Structure and Techniques – Understand and apply key terms (such as plot structure, character development, dialogue, and staging) to analyze how playwrights convey meaning.

2. Interpreting Themes and Contexts – Evaluate major themes and social or historical contexts within dramatic works to understand their broader significance.
3. Critical Reading and Writing – Develop analytical writing skills through essays and reflections that interpret dramatic texts and articulate thoughtful arguments about their form and meaning.

Introduction to Filmmaking (Semester)

Grades 9-12

“I make movies for the people who love movies.” — Ryan Coogler (Writer and Director of Sinners, Creed and Black Panther). This creative, hands-on course for students in grades 9–12 explores the fundamentals of visual storytelling, film history, and basic editing techniques. Building on students’ familiarity with social media and digital video, the course empowers them to move from casual content creators to intentional filmmakers who understand how images, sound, and editing shape meaning. **This course can also be taken to satisfy Frederica Academy’s half credit Fine Arts course requirement.**

Students will develop the following skills throughout this course:

1. Visual Storytelling & Creative Expression: Students learn how to communicate ideas, emotions, and messages through images, sound, and editing—turning concepts into compelling short films and digital stories.
2. Technical Media Production & Editing: Students develop practical skills with cameras, lighting, sound recording, and editing software, gaining hands-on experience in filming, cutting, and polishing video projects.
3. Collaboration, Planning, & Project Management: Through group productions, students practice brainstorming, scripting, scheduling, problem-solving, and meeting deadlines—skills essential to both creative industries and academic success.

MATH

MATH CORE OFFERINGS

Algebra I (Full Year)

Grade 9

Algebra I introduces students to foundational algebraic concepts and problem-solving skills through the study of real numbers, variables, algebraic expressions, and simplifying expressions. Students learn to solve linear and absolute value equations, graph and interpret inequalities, and analyze relationships using tables, equations, and graphs. The course explores linear, quadratic, and exponential functions, with emphasis on slope, intercepts, rates of change, and writing equations to model situations. Students also study polynomial operations, factoring, and solving quadratic equations, as well as solving systems of linear equations and inequalities using multiple methods. Introductory data analysis is included through scatter plots, linear models, and interpreting trends. Throughout the course, students develop

abstract reasoning, computational fluency, and the ability to apply algebraic thinking to real-world situations, preparing them for Geometry, Algebra II, and future academic and career pathways.

Students will develop the following skills throughout this course:

1. How to be a successful mathematics student
2. Graphing functions
3. Solving equations using algebraic operations

Geometry (Full Year)

Grades 9-10

This is a two-semester sequential course that integrates the study of plane and solid geometry. The course reinforces the concepts of intermediate Algebra through the solution of geometric problems. Units of study include segment and angle properties, line and angle relationships, parallel and perpendicular lines, coordinate Geometry, properties of triangles, quadrilaterals, and other polygons, properties of circles, perimeter, area, and volume calculations, geometric transformations, congruence and similarity, inductive and deductive reasoning, formal geometric proofs, visual and spatial reasoning, and skills necessary for Advanced Algebra courses.

Students will develop the following skills throughout this course:

1. Line and Angle Relationships
2. Area and Volume Calculations
3. Deductive Reasoning

Honors Geometry (Full Year)

Grade 9

This is a two-semester sequential course that integrates the study of plane and solid geometry. The course reinforces the concepts of Intermediate Algebra through the solution of geometric problems. Units of study include segment and angle properties, line and angle relationships, parallel and perpendicular lines, coordinate geometry, properties of triangles, quadrilaterals, and other polygons, geometric means, triangles midsegments, medians, and altitudes, properties of circles, perimeter, area, and volume calculations, geometric transformations, congruence and similarity, inductive and deductive reasoning, formal geometric proofs, visual and spatial reasoning, and skills necessary for honors courses in Advanced Algebra.

Students will develop the following skills throughout this course:

1. Properties of Geometric Figures
2. Deductive Reasoning
3. Analytic Geometry

Algebra II (Full Year)

Grades 10-11

Algebra II builds on the concepts introduced in Algebra I and Geometry, deepening students’ understanding of algebraic relationships, functions, and mathematical modeling. Students study linear, absolute value, quadratic, polynomial, radical, rational, exponential, and logarithmic functions, with an emphasis on

analyzing, graphing, and comparing their behaviors. Throughout their study of the parent functions, students will strengthen their understanding of function transformations allowing them to better understand graphical behaviors of functions. Additional topics include advanced polynomial operations and factoring, complex numbers, rational expressions, inverse functions, and solving complex equations and inequalities, including systems of equations. Students apply algebraic reasoning to real-world problems using multiple representations, including tables, graphs, and equations, while strengthening abstract thinking, multi-step problem-solving, and computational fluency. Algebra II prepares students for Pre-Calculus and other advanced mathematics courses, as well as applications in science.

Students will develop the following skills throughout this course:

1. Graphing functions without the use of technology
2. Solving equations through understanding algebraic operations
3. Developing the study skills required to be a successful mathematics student.

Honors Algebra II (Full Year)

Grades 9-10

This is a two-semester sequential course that reviews and extends the concepts and skills obtained during Algebra I and Honors Geometry. This course includes simplifying expressions, solving equations and inequalities, graphing of parent functions, sequences and series of real numbers, linear functions and relations, matrix operations, systems of linear equations in two and three variables, polynomials and their factors, rational algebraic expressions and equations, understanding of domain and range of functions, radical expressions and equations, quadratic equations, complex numbers, rational and irrational exponents, logarithmic functions and graphs, quadratic relations and systems, basic and advanced trigonometric functions, transformation on functions, intro to statistics and operations to help prepare the student AP Pre-Calculus.

Students will develop the following skills throughout this course:

1. Transformations
2. Solving Multiple Equation Types
3. Trigonometry

PreCalculus (Full Year)

Grades 11-12

PreCalculus is a two-semester sequential course that is designed to prepare students for college mathematics courses. Topics included are polynomial functions and their graphs, inverse functions, variations, rational functions and their graphs, complex numbers, exponential functions and their graphs, logarithmic functions and their graphs, systems of linear equations in two and three variables, systems of inequalities in two variables, trigonometric functions and identities, triangular applications, and, if time allows, an introduction to conic sections.

Students will develop the following skills throughout this course:

1. Solve different types of equations
2. Understand functions and their graphs, especially relating a function equation to its graph, with emphasis on exponential and logarithmic functions
3. Trigonometry

AP PreCalculus (Full Year)

Grades 10-11

AP PreCalculus is a two-semester sequential course aimed at junior students and which is designed to prepare students for AP Calculus or Calculus. Topics included are polynomial functions and their graphs, rational functions and their graphs, complex numbers, exponential functions and their graphs, logarithmic functions and their graphs, inverse functions, variations, systems of linear equations in two and three variables, systems of inequalities in two variables, conic sections, trigonometric functions and identities, triangular applications, vectors, polar coordinates, sequences and series, permutations, combinations, and probability. Introduction to limits is the final topic covered.

Students will develop the following skills throughout this course:

1. Graphics Representation of functions
2. Algebraic Representation of Functions
3. Trigonometric/Polar Functions

Calculus (Full Year)

Grades 11-12

This two-semester sequential course is an overview of Differential and Integral Calculus designed to prepare the student for College Calculus. Emphasis is placed on techniques for finding limits, derivatives and integrals of functions.

Students will develop the following skills throughout this course:

1. Limits
2. Derivatives
3. Integrals

AP Calculus AB (Full Year)

Grades 11-12

AP Calculus AB is a two-semester course that adheres to the course requirements set forth by the Advanced Placement division of the College Board. It is a sequential course of Differential and Integral Calculus. Topics included are a review and extension of basic precalculus concepts, algebraic functions and their graphs, limits, continuity, the derivative of a function, differentiation of algebraic and trigonometric functions, implicit differentiation, related rates, optimization and other applications of derivatives, L'Hôpital's Rule, differential equations, anti-differentiation, definite integrals, integration and techniques of integration, and applications of integrals. This course is equivalent to a Calculus I college course.

Students will develop the following skills throughout this course:

1. Determine limits and continuity of functions, as well as understand the connection between limits and derivatives

2. Find derivatives of various functions and use this knowledge in applications
3. Find integrals of functions and use this knowledge in applications, such as areas and volumes

AP Calculus BC (Full Year)

Grades 11-12

AP Calculus BC is a two-semester course that adheres to the course requirements set forth by the Advanced Placement division of the College Board. It is a sequential course of Differential and Integral Calculus. Topics included are limits and continuity, defining and calculating derivatives, applications of the derivative, the integral, Fundamental Theorem of Calculus, differential equations, applications of the definite integral, sequences, L'Hôpital's Rule, improper integrals, series, and parametric and polar functions. This course is the equivalent to college courses Calculus I and Calculus II.

Students will develop the following skills throughout this course:

In addition to a review of all AP Calculus AB skills, students will:

1. Learn new skills of integration
2. Discover the importance of sequences and series in integral calculus
3. Apply knowledge of derivatives and integrals to parametric equations, polar equations, and vectors.

MATHEMATICS

MATH ELECTIVES

AP Statistics (Full Year)

Grades 11-12

AP Statistics is an introductory college-level statistics course. The course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students will develop an understanding of statistics using technology, investigations, problem solving, and writing as they explore the following themes of study: exploring data, sampling and experimentation, variation and distribution, patterns and uncertainty, and data-based predictions, decisions, inferences, and conclusions. This course is a good choice for students considering a major in health, science, mathematics, business, education, and data sciences. **NOTE:** Students are required to have a TI-84 Plus graphing calculator.

Students will develop the following skills throughout this course:

1. Learn how to organize data
2. Make predictions based on data
3. Make inferences based on data using technology

SCIENCE

SCIENCE CORE OFFERINGS

Biology (Full Year)

Grade 9

Biology is a full year course in the field of science concerned with the study of living organisms. During the school year the students will investigate life on all levels through study, observation, and experimentation. A significant portion of the course will be devoted to work in the laboratory. Study includes organic chemistry, the cell, DNA, genetics, evolution, viruses, bacteria, protists, fungi, plants, animals, ecology, and environmental biology. Enrollment in **Honors Biology** will be explained during the first quarter of the course.

Students will develop the following skills throughout this course:

1. Designing an experiment
2. Conducting an experiment
3. Reporting an experiment

Chemistry (Full Year)

Grade 10

Chemistry is a yearlong course designed to introduce students to the fundamental concepts of Chemistry. While the course does not emphasize advanced mathematics, basic math skills are required to support problem-solving and calculations. Students will develop a strong foundation in Chemistry, preparing them for future science courses. Topics include atomic theory, the periodic law, periodic relationships, bonding and molecular geometry, mole theory, stoichiometry, gas laws, solutions, thermochemistry, chemical equilibrium, and acids and bases. Students who meet the prerequisite requirements may elect to enroll in **Honors Chemistry** during the first quarter. Students in Honors Chemistry will be given more advanced instruction through small groups in class and recorded note videos.

Students will develop the following skills throughout this course:

1. Problem-solving skills
2. Critical thinking and analysis
3. Laboratory and practical skills

AP Biology (Full Year)

Grades 10-12

AP Biology is a yearlong course designed to mimic the introductory college Biology curriculum. The subject matter is similar to the regular Biology class, but in greater depth and detail, with special emphasis on organic chemistry, molecular biology, DNA, genetics, evolution, ecology, and environmental biology. A significant portion of the course will be devoted to work in the laboratory. A test is taken at the end of the year to determine possible exemption of the introductory course in college.

Students will develop the following skills throughout this course:

1. Designing an experiment
2. Conducting an experiment
3. Reporting an experiment

Physics (Full Year)

Grades 11-12

The Physics course is designed to provide the student with a broad knowledge of the principles of classical physics and the ability to solve problems. The first semester focuses on mechanics, properties of matter, heat, and sound. Newton's laws governing force and motion and the laws of conservation of momentum and energy serve as the foundation for solving problems. Topics involving projectile and circular motion, gravitation, impulse and momentum, energy and work, and machines are covered. The second semester shifts to electricity and magnetism, light, nuclear physics, and relativity/quantum theory. Topics include electromagnetic waves, electric circuits, magnetic fields, the nature of light, nuclear reactions, and the principles of relativity and quantum mechanics.

Students will develop the following skills throughout this course:

1. Solving Complex Mechanics Problems
2. Conducting Experimental Investigations
3. Applying Theoretical Concepts to Real-World Scenarios

AP Physics 1 (Full Year)

Grades 11-12

The AP Physics 1 course is designed to provide students with a broad knowledge of the principles of physics and the ability to solve problems. The first semester focuses on kinematics, force and translational dynamics, work, energy and power, and linear momentum. Newton's laws and the principles of conservation serve as the foundation for solving problems. The second semester shifts to torque and rotational dynamics, energy and momentum of rotating systems, oscillations, and fluids. Topics include rotational kinematics, rotational inertia, angular momentum, simple harmonic motion, and fluid dynamics. Throughout the course, students will develop scientific critical thinking and reasoning skills through inquiry-based learning. Hands-on laboratory work comprises 25 percent of the instructional time, with a focus on inquiry-based investigations that allow students to apply the science practices.

Students will develop the following skills throughout this course:

1. Analyzing Rotational Dynamics
2. Applying Fluid Mechanics Principles
3. Conducting Inquiry-Based Laboratory Investigations

AP Chemistry (Full Year)

Grades 11-12

AP Chemistry is a course designed to present the equivalent of a one - year freshmen College Chemistry Course. It offers the opportunity to earn college credit (determined by AP score) as well as high school credit. Students will gain an in-depth understanding of the fundamentals of chemical and mathematical

problem solving. At least 25% of the course will involve laboratory activities that would be comparable to a college level laboratory experience. The subject matter is similar to the regular Chemistry class, but in greater depth and detail, with special emphasis on stoichiometry, thermodynamics, atomic theory, bonding and molecular shapes, acids and bases, chemical equilibrium, and electrochemistry. Emphasis is placed on depth of understanding of a topic, rather than the breadth of topics.

Students will develop the following skills throughout this course:

1. Advanced Problem-solving and Mathematical Application
2. Data analysis and interpretation
3. Providing logical scientific explanations through written form

SCIENCE

SCIENCE ELECTIVES

Astronomy (Semester)

Grades 11-12

Astronomy is a one-semester survey course designed to provide students with a broad knowledge of astronomical phenomena. The course covers eight main topics: Celestial Mechanics and the Earth-Moon System, Planetary Science and Observations, Light and Telescopes, Our Solar System, Exploring the Planets, Stellar Phenomena, Cosmic Perspectives, and Cosmology and Beyond. Students will follow an online textbook and engage in laboratory work, including several nights each semester dedicated to sky observation using telescopes and binoculars. This course is highly recommended for students interested in pursuing college study in the sciences.

Students will develop the following skills throughout this course:

1. Celestial Mechanics Understanding
2. Planetary Science Proficiency
3. Astronomical Observation Skills

Geology (Semester)

Grades 9-12

This semester elective introduces students to the study of the Earth and the processes that shape it. Topics may include rocks and minerals, Earth's structure, landforms, and the natural forces that shape the planet over time. Students will develop an understanding of how Earth's physical features form and change, as well as the role geology plays in the natural world.

Students will develop the following skills throughout this course:

1. Observation and Classification Skills
2. Scientific Inquiry and Analysis Skills
3. Critical Thinking About Earth Systems

Anatomy (Semester)

Grades 11-12

Anatomy is a one semester class in which each student will learn about the human body and its mechanisms, from the structure and function of individual cells and organs to that of the body as a whole. One or two chapters are devoted to each body system, including the integumentary, skeletal, muscular, nervous, cardiovascular, lymphatic, immune, digestive, respiratory, urinary, and reproductive systems. Both the anatomy and physiology of each body system is studied in depth. A recommended course for anyone interested in pursuing a career in a health related profession.

Students will develop the following skills throughout this course:

1. Design an experiment
2. Conduct an experiment
3. Report an experiment

Marine Biology (Semester)

Grades 11-12

Marine Biology is a one-semester survey class in which students will learn about ocean life, the ocean floor, seawater, marine plants and animals, marine ecology, shoreline biology, and marsh/estuary biology. Students will spend a significant portion of time in the laboratory, as well as attending several off campus activities that investigate our local environment, ecology, and area science labs and research facilities.

Students will develop the following skills throughout this course:

1. Design an experiment
2. Conduct an experiment
3. Report an experiment

Special Topics - Science Olympiad (Semester)

Grades 9-12

Special Topics with Science Olympiad is a one semester course where students will be able to investigate a variety of scientific topics based on their interests. Their research will contribute towards the Frederica Academy Science Olympiad team. Science Olympiad has three different types of competitions that students can compete in: Written Research, Laboratory Investigations, and Build Projects. There are 23 different competitions that students can choose between. As a part of the course, students will prepare 1-2 topics for each category listed above. Written research involves creating a binder of research on a certain topic and then taking a written test on the topic. Examples include: Anatomy and Physiology, Entomology, Rocks and Minerals, Codebusters, Astronomy, and more! Laboratory Investigations involve writing and/or following lab instructions to complete a lab experiment accurately. Examples include: Chemistry Lab, Forensics, Experimental Design, Circuit Labs, and more! The last type of project is a Build Project where students will create and construct an engineering project. Examples include: Electric

Vehicle, Bungee Drop, Helicopter, Hovercraft, and more! Students will utilize this research to participate in regional Science Olympiad competitions. **Students who take the semester course are expected to compete in the Science Olympiad invitational in November.**

Students will develop the following skills throughout this course:

1. Critical thinking and problem-solving skills
2. Design and conduct an experiment
3. Evaluating and analyzing scientific sources

SOCIAL SCIENCE

SOCIAL SCIENCE CORE OFFERINGS

World History (Full Year)

Grade 9

This ninth grade course focuses on early and classical civilizations of Asia, Africa, Europe, and the Americas, through approximately 1500 CE. Key topics include the emergence of various types of human societies and the development of agriculture, economic and political systems, philosophy, and religion, with an emphasis on comparison and analysis of human society across time and space. The course will also focus on the study habits, critical thinking, and writing skills necessary for success in future history courses.

Students will develop the following skills throughout this course:

1. Evaluating and analyzing sources
2. Argumentation
3. Making historical connections

Modern World History (Full Year)

Grade 10

This course focuses on revolutions, conflicts and other developments that have shaped the modern world over the past five centuries. Examples include colonialism and neocolonialism, religious and political conflicts of the early modern era, changing economic and political realities following industrialization, and the background of conflicts that are still ongoing today. You will be expected to read primary sources and discuss them in class and in writing, to better understand these events from the perspective of those involved.

Students will develop the following skills throughout this course:

1. Reading and evaluating primary sources
2. Discussing and defending ideas in a group setting
3. Communicating discussed ideas in writing

AP World History: Modern (Full Year)

Grade 10

AP World History: Modern is an introductory, college-level

modern world history course for tenth graders. Students will 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 will learn how to think critically and employ historical reasoning skills such as analyzing sources, developing historical arguments, making historical comparisons, making connections among historical developments in different times and places, and analyzing contextualization, causation, and continuity and change over time.

Students will develop the following skills throughout this course:

1. Evaluating and analyzing sources
2. Argumentation
3. Making historical connections

United States History (Full Year)

Grade 11

This eleventh grade history course covers the history of the United States from its Early America origins to the modern era while emphasizing events, movements, institutions, and patterns that helped shape modern America. Students will learn how to use graphic organizers and content summaries to understand the material as well as develop the skills to present their research to a group audience through presentations and unit projects. Also, students will gain writing skills by answering short answer prompts, participating in creative written assignments, and reflection assessments. The emphasis of the course content will include the Early Americas, the Rise of Colonialism and the New World, World War I, the Roaring 20s, the Great Depression, World War II, the Cold War, the Civil Rights Movement, and Terrorism.

Students will develop the following skills throughout this course:

1. Historical analysis and synthesis
2. Research and presentation skills
3. Analytical and reflective writing

AP U.S. History (Full Year)

Grade 11

AP U.S. History is a challenging course that provides an opportunity for advanced students to engage in college-level study of American history, with emphasis on critical and analytical thinking, persuasive and analytical writing, interpretation and analysis of primary source documents and historical data, and the philosophy and methodology of history. It is also an opportunity for students to develop their understanding of American history by covering the nine major time periods.

Students will develop the following skills throughout this course:

1. Historical analysis and synthesis
2. Research and presentation skills

3. Analytical and reflective writing

SOCIAL SCIENCE

SOCIAL SCIENCE ELECTIVES

AP Comparative Government & Politics (Semester)

Grades 11-12

AP Comparative Government is a semester course designed to introduce students to the rich diversity of political life outside the United States. Students may earn college credit for the course if they are successful on the AP exam taken in May, depending on the policies of their chosen college. The course uses a comparative approach to examine the political structures, policies, as well as the political, economic, and social challenges among six selected countries: Great Britain, Mexico, Russia, Iran, China, and Nigeria. Additionally, students examine how different governments solve similar problems by comparing the effectiveness of approaches to many global issues. Introduction to Comparative Politics; Sovereignty, Authority, and Power; Political Institutions; Citizens, Society, and the State; Political and Economic Change; Public Policy will serve as curriculum themes.

Students will develop the following skills throughout this course:

1. Comparative political analysis
2. Critical thinking and problem solving
3. Global awareness and political literacy

AP Macroeconomics (Semester)

Grades 11-12

AP Macroeconomics is a college-level course that introduces students to the principles that apply to an economic system as a whole. The course places particular emphasis on the study of national income and price-level determination. It also develops students' familiarity with economic performance measures, the financial sector, stabilization policies, economic growth, and international economics. Students learn to use graphs, charts, and data to analyze, describe, and explain economic concepts.

Students will develop the following skills throughout this course:

1. Economic analysis and critical thinking
2. Data interpretation and quantitative reasoning
3. Policy evaluation and problem solving

AP Microeconomics (Semester)

Grade 11-12

AP Microeconomics is a college-level course that introduces students to the principles of economics that apply to the functions of individual economic decision-makers. The course also develops students' familiarity with the operation of product and factor markets, distributions of income, market failure, and the role of government in promoting greater efficiency and equity in the economy. Students learn to use graphs, charts, and data to analyze, describe, and explain economic concepts.

Students will develop the following skills throughout this course:

1. Microeconomic analysis and decision making
2. Data interpretation and graphical analysis
3. Policy evaluation and critical thinking

AP U.S. Government & Politics (Semester)

Grades 11-12

AP U.S. Government and Politics is a semester course designed to provide students with an analytical perspective on government and politics in the United States and establish a foundation for civic participation. Students may earn college credit for the course if they are successful on the AP exam taken in May, depending on the policies of their chosen college. In this course, students will examine the key concepts leading to the development of the U.S. Government as well as critically examine the political and government structures and policy-making bodies in the United States, with an eye to gaining a fuller understanding of the rights and duties associated with effective American citizenship. The Foundations of American Democracy, Interactions Among Branches of Government, Civil Rights and Liberties, American Political Ideologies and Beliefs, Political Participation will serve as curriculum units.

Students will develop the following skills throughout this course:

1. Civic literacy and political analysis
2. Critical thinking and argumentation
3. Engaging citizenship and policy evaluation

Economics & Finance (Semester)

Grades 11-12

This is a semester-long survey class of the principles of personal finance and the economic foundations of our increasingly complex financial world. Four major sections of our economic and financial world are studied: Investment techniques and terms, Credit and Mortgages, the Federal Reserve and Monetary/Fiscal Policy and Federal Tax Code/Insurance. A final project includes the creation of a Mutual Fund and a presentation on the performance of the investments that have been tracked for a 14 week period.

Students will develop the following skills throughout this course:

1. Financial literacy
2. Economic analysis
3. Investment strategy

The History of Rock + Roll (Semester)

Grades 11-12

The History of Rock is a course designed to familiarize the student with the historical, social, cultural, and musical forces that contributed to the emergence and eventual development of rock music. Students will gain a better understanding of historical trends, innovations, and change in rock by learning ways to identify and analyze rock music based on performer, genre, era, and influence. Topics covered will include the origins of rock music, the 1950s and Elvis, the British Invasion and the psychedelic Sixties, Disco,

Punk, New Wave, Rap, Grunge, and others.

Students will develop the following skills throughout this course:

1. Historical and cultural analysis
2. Music appreciation and genre identification
3. Critical listening and comparative analysis

The History of Sports (Semester)

Grades 9-12

The History of Sports is a course designed to familiarize students with the foundation of a variety of sports, follow their development, and the reasons for their popularity. For each sport, introductions will be made by viewing documentaries, reading excerpts from books, or researching articles from the athletic realm. The course will look at the history that shaped the sports, identify the major players, organizations and/or countries involved, and examine ways they impacted society, culture, and history as well as their relevance in today's world. The course will focus on more popular sports: baseball, basketball, football, golf, and soccer but will also cover others: tennis, hockey, boxing, rugby, and cricket. Students will be required to follow the sporting news and build perspectives and opinions from a variety of sources about athletics. The class will cultivate critical thinking and put an emphasis in class participation and inquiry, documentary film analysis, and topic presentations.

Students will develop the following skills throughout this course:

1. Historical and cultural analysis
2. Sports appreciation and knowledge
3. Critical thinking and research

World Geography (Semester)

Grades 9-12

This course provides a comprehensive introduction to the essential concepts of physical and human geography. Students will examine not only the locations and features of the Earth's landscapes, but also the complex patterns that shape human life across the globe. Topics include population dynamics, cultural traditions, languages, migration, economic systems, political structures, and the material conditions that influence daily life in different regions. Through case studies, map analysis, and current events, students will develop the skills to interpret global patterns and understand how geography influences historical developments and contemporary issues. By the end of the course, students will be better equipped to analyze today's global challenges within their geographic context and to appreciate the diverse perspectives and lived experiences of people around the world.

Students will develop the following skills throughout this course:

1. Read, interpret, and analyze geographic and demographic data from a variety of sources, including maps, charts, and

primary texts

2. Present research findings clearly and persuasively, defending positions with evidence and thoughtful reasoning
3. Analyze areas of the world as interconnected and shaped by specific historical and material circumstances.

World Mythology & Religious Traditions (Semester)

Grades 10-12

This course presents the study of myth (a type of traditional narrative distinct from and older than evidence-based history) as a window into the worldviews, identities, anxieties and aspirations of various cultures, past and present. The course will investigate what these stories about gods, heroes, monsters and quests for enlightenment, as well as the rituals and philosophical teachings that overlap with them, might tell us about our shared human experience, as well as some meaningful cultural differences across time and space.

Students will develop the following skills throughout this course:

1. Close reading and critical analysis of primary sources
2. Interpreting historical narratives within their broader political, cultural, and social contexts
3. Crafting clear, well-supported written arguments grounded in relevant textual evidence.

WORLD LANGUAGES

SPANISH OFFERINGS

Spanish I (Full Year)

Grade 9

The first year course in Spanish is based on the building blocks of the language. This course encourages students to use the vocabulary, language structures, and grammar they have learned and to apply the concepts through projects, skits, presentations, interviews, and story creation. This course also exposes students to Hispanic culture through readings and video presentations.

Students will develop the following skills throughout this course:

1. Greeting others, introducing themselves, and asking basic questions about personal information.
2. Describing family members and their relationships.
3. Discussing daily routines with relevant vocabulary and expressions.
4. Comprehending basic conversations in everyday contexts.
5. Reading short texts and identifying key vocabulary related to common topics.
6. Writing simple sentences with proper subject-verb agreement, pronoun usage, and sentence structure.

Spanish II (Full Year)

Grade 10

Spanish II expands language competency in listening, speaking,

reading and writing in a proficiency-oriented curriculum. The course expands student knowledge by enforcing the essential elements of reading, speaking, and writing. A continuous study of Spanish culture and civilization is reinforced with varied projects encouraging developing interests. The class is taught exclusively in Spanish and students are expected to participate orally every class period.

Students will develop the following skills throughout this course:

1. Engage in basic conversations by introducing themselves, asking and answering simple questions about personal details, daily routines, likes and dislikes, and past experiences while using correct grammar and vocabulary.
2. Apply a wider range of verb tenses, including the present, preterite, and imperfect, in both spoken and written Spanish.
3. Read and comprehend short stories, articles, and dialogues, extracting key information and main ideas.

Honors Spanish II (Full Year)

Grade 9

Honors Spanish II expands language competency in listening, speaking, reading and writing in a proficiency-oriented curriculum. The course exceeds the regular requirements for the capable and highly motivated student to develop a higher level of proficiency. The course expands student knowledge by enforcing the essential elements of reading, speaking, and writing. A continuous study of Spanish culture and civilization is reinforced with varied projects encouraging developing interests. The class is taught exclusively in Spanish and students are expected to participate orally every class period.

Students will develop the following skills throughout this course:

1. Comfortably hold basic conversations on a variety of topics
2. Understand moderately complex written Spanish
3. Demonstrate a strong grasp of intermediate-level vocabulary and grammar

Spanish III (Full Year)

Grade 11

In Spanish III, students further develop their communicative skills in speaking and writing and their interpretive skills in reading and listening. They develop their presentational skills through various projects and presentations. Students master more complex grammatical structures and develop the ability to discuss topics related to contemporary events, the environment, volunteerism, and inspirational figures. Students are expected to participate orally every class period in Spanish.

Students will develop the following skills throughout this course:

1. Demonstrate communicative efficiency in Spanish situational role-plays and academic presentations at intermediate level incorporating increasingly advanced grammar and vocabulary.
2. Comprehend and discuss academic and cultural Spanish texts.

3. Acquire effective writing skills for formal and informal scenarios at an intermediate level, able to write multi-sentence compositions.

Honors Spanish III (Full Year)

Grade 10

In Honors Spanish III, students further develop their communicative skills in speaking and writing and their interpretive skills in reading and listening. Students learn more complex grammatical structures. Students develop the ability to discuss topics related to contemporary events, the environment, volunteerism, and inspirational people. Honors students acquire additional vocabulary beyond the Spanish III curriculum, work at a faster pace, and work on more challenging selections and activities. Students are expected to participate orally every class period and speak Spanish 100% of the time.

Students will develop the following skills throughout this course:

1. Demonstrate consistent communicative efficiency in a variety of formal and informal Spanish situational role-plays and presentations, further advancing pronunciation and fluency.
2. Write and read Spanish to an upper-intermediate level, with the compositions incorporating increasingly advanced vocabulary and grammar.
3. Expand cultural knowledge of the Hispanic world and aural comprehension through music and film.

Honors Spanish IV (Full Year)

Grade 11

Honors Spanish IV focuses on mastery of advanced grammatical structures and vocabulary acquisition. Students improve cultural competence, auditory comprehension, reading comprehension, and speaking and writing skills through the use of authentic music, videos, texts, podcasts, and a multimedia text. Students learn about Spanish History and Spanish Art, from prehistoric times until today. Spanish is used exclusively in the classroom.

Students will develop the following skills throughout this course:

1. Understand and elaborate on Spanish history, music, and art.
2. Read and interpret authentic texts written by well-known Hispanic authors.
3. Converse freely about personal relationships, the family, different professions, life in the city, the environment, politics, and science and technology using advanced vocabulary and grammatical structures.

AP Spanish Language and Culture (Full Year)

Grade 12

The AP Spanish Language and Culture Course reinforces and sharpens students' language and critical thinking skills across three communication modes: interpersonal, interactive, and presentational. Students gain greater competence in the Spanish language and literature, and social, environmental, and cultural issues in the Spanish-speaking world. Students are prepared to take the AP Spanish Language and Culture Exam which focuses on

six holistic themes. Spanish is used exclusively in the classroom.

Students will develop the following skills throughout this course:

1. Understand and conduct extended and meaningful conversations with native speakers.
2. Articulate the products, practices, and perspectives of different Hispanic cultures and compare them to our own.
3. Write comprehensive essays and formal emails using complex grammar and vocabulary.

WORLD LANGUAGES

LATIN OFFERINGS

Latin III (Full Year)

Grade 11

The third year of Latin continues to build proficiency through comprehensible oral and written input. Students will read intermediate texts from various authors, time periods, and cultural contexts, which will vary from year to year. In addition to the ancient Roman world, we will discuss the evolution of the Latin tradition through the medieval and modern periods, in order to highlight its breadth and diversity.

Students will develop the following skills throughout this course:

1. Become comfortable with the characteristics of medieval and Christian Latin
2. See how medieval Latin forms a bridge to modern English vocabulary
3. Appreciate Latin-language humor of different eras

AP Latin (Full Year)

Grades 11-12

The AP Latin course involves close reading of passages from the letters of Pliny the Younger and Vergil's Aeneid, as well as additional sources chosen by the teacher. Students are required to prepare and translate the readings and to discuss them with respect to their cultural, historical, and literary context. In addition to the assigned Latin passages, students will read additional passages from these works in English, the better to understand each work as a whole.

Students will develop the following skills throughout this course:

1. Prepare for the AP exam, particularly the literal style of translation mandated by the College Board
2. Scan lines of Latin dactylic hexameter (epic meter)
3. Compose essays (in English) based on a close reading of the Latin text

FINE ARTS

Art I (Semester)

Grades 9-12

Art I is a foundation course focusing on the elements and principles of art. Students explore a variety of media through six-week intervals of color theory (painting), sculpture (ceramics), and drawing. Technical skills are developed using a wide range of tools and processes. Art History is integrated into projects for historical and cultural significance.

Students will develop the following skills throughout this course:

1. Recognize the fundamental elements and principles of art
2. Develop basic skills in various art mediums
3. Foster creativity through hands-on art making

Art II (Semester)

Grades 9-12

Art II builds on the knowledge of Art I as students advance to more difficult assignments and media. Continuing in six-week intervals, students are challenged to use the creative process to problem solve. Technical skills are refined as students continue to work in a variety of media. Students must complete Art I to enroll in Art II class.

Students will develop the following skills throughout this course:

1. Continue to expand on what they learned in Art I, as well as utilize the methods of art that show depth and distance
2. Describe and demonstrate the aspects of portraiture, analyzing the exemplary works and using these concepts in their own work
3. Expand their skillset by demonstrating willingness to experiment to with new mediums and processes

Art III (Semester)

Grades 9-12

This course is developed for the art student who is extremely self-directed and can focus on improving technical abilities and creating high-quality, portfolio-ready pieces, often exploring, practicing, and refining their unique artistic voice. Instruction covers advanced methods in drawing, painting, 3-D design (sculpture/ceramics), and digital media. Students are encouraged to deepen their knowledge of historical and contemporary artists to inform their personal work. This course is considered a portfolio building class for those interested in taking AP Art during their senior year.

Students will develop the following skills throughout this course:

1. Refine artistic style and voice in your art
2. Continue to develop technical skills through various mediums
3. Develop a knowledge base of historical and contemporary artists

AP 2-D Art and Design

Grades 11-12

AP 2-D Art and Design requires students to develop and apply

skills of inquiry and investigation, practice, experimentation, revision, communication, and reflection. The class focuses on concepts and skills emphasized within college art foundations courses. A portfolio submission is required to apply for AP Art. Once accepted, a portfolio consisting of a minimum of 20 original pieces is required for class completion, based on requirements set forth by the AP College Board.

Students will develop the following skills throughout this course:

1. Develop inquiry that guides a sustained investigation through art and design
2. Continue to hone skills with varying materials and processes to become confident in multiple mediums
3. Be able to incorporate and use peer/teacher feedback to inform and improve artistic works

Digital Design (Semester)

Grades 9-12

Digital Design involves designing in digital space so the created content can be displayed and seen on a digital device. In this course, students will create digital drawings, animations and interactive sketches while also learning how to code. In addition, students will learn the basics of web design, app design and 3D design.

Students will develop the following skills throughout this course:

1. Understand the basics of HTML coding and syntax
2. 3D model, combine shapes, create openings and measure using a caliper
3. Use slicing software for 3D printing

Graphic Design (Semester)

Grades 9-12

Graphic Design is an introductory course designed to expose students to the areas of Graphic Design and Web Design using programs from the Adobe Creative Cloud Suite. Students will explore graphic communications through the understanding of the elements and principles of design; as well as, the design process, from idea development through the final execution of a printed, digital, or product design. Students will be engaged in 2D and 3D computer art, web design, digital photography, and portfolio development.

Students will develop the following skills throughout this course:

1. Recognize the elements of design and how to use them in a finished advertising poster
2. Design software resources (photoshop and illustrator)
3. 3D product mock ups and create a branding package to sell their products

Popular Music Ensemble (Full Year)

Grades 9-12

This is an instrumental performance class. While the primary

instruments are guitar, bass, keyboard, drums, and vocals, instruments from the woodwind, brass, and string families are welcome to enroll. PME integrates culturally relevant music into a learner-centered music curriculum. Audio-Video technology tools are used as a significant component of instruction.

At the beginning level, students must be able to read simple notated music, understand chord charts, and demonstrate a desire to perform. Applied music theory and sight-reading skills are taught throughout the levels. There are required rehearsals and performances outside of the regularly scheduled class meeting times.

The PME track offers the four following sections while placement is decided upon by the instructor and administration:

- Performance PME
- Concert PME
- Advanced PME
- Popular Music Ensemble

Students will develop the following skills throughout this courses:

1. Instrumental and performance skills
2. Music literacy and theory
3. Collaborative and technological proficiency

Yearbook (Semester)

Grades 11-12

Yearbook class offers opportunities to develop skills in photography and journalism as well as digital publishing. Students produce a professional publication through graphic design, page layout, and writing.

Students will develop the following skills throughout this course:

1. Learn to write and edit texts
2. Collaborate on photo editing and work as a team to meet strict production deadlines
3. Create a finished book and slide show and present them at the end of the year to the school

COMPUTER SCIENCE

AP Computer Science Principles (Full Year)

Grades 10-12

AP Computer Science Principles introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology can impact the world. This course can be taken using either the JavaScript or Python programming language.

Students will develop the following skills throughout this course:

1. Write programs to solve problems
2. Make connections between concepts in computing

3. Analyze computational work (break down the steps)

AP Computer Science A (Full Year)

Grades 11-12

AP Computer Science A introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.

Students will develop the following skills throughout this course:

1. Design and write programs
2. Develop algorithms
3. Test programs and correct errors

Artificial Intelligence (Semester)

Grades 10-12

The Artificial Intelligence (AI) course teaches students important programming concepts that enable the use of AI in computer science and society at large. Students learn the implications of AI on society and develop a series of projects that illustrate the variety of ways AI can be used to optimize and predict information.

Students will develop the following skills throughout this course:

1. How to build and program AI models
2. Techniques to collect, clean and prepare data for AI
3. Awareness of potential bias and societal impacts of AI development

Cybersecurity I/II (Semester)

Grades 9-12

As our world becomes increasingly dependent on technology, cybersecurity is a topic of growing importance. It is crucial that companies and individuals take precautions to protect themselves from the growing threat of cyber attacks. This course prepares students with crucial skills to be responsible citizens in a digital future.

Students will develop the following skills throughout this course:

1. Digital citizenship and online safety
2. Fundamentals of encryption and decryption
3. Understanding of how networks operate

Introduction to Engineering (Semester)

Grades 9-12

This course presents an overview of the fundamentals of electronic circuit analysis, starting with an overview of electrical theory and moving to simple circuit components like power supplies, resistors, capacitors, LED lights, and inductors. Students will build circuits on breadboards and solder circuits on PCBs. They will learn basic CAD design and 3D printing to add to their learning about circuits

and then design and create functional projects.

Students will develop the following skills throughout this course:

1. Fundamentals of electrical circuits, read schematics and soldering
2. Basic CAD design and 3D printing
3. Prototyping and problem solving

Intermediate Engineering (Semester)

Grades 9-12

Students will learn Arduino basics and programming in C++, advanced CAD using Fusion 360, laser cutting and CNC basics. They will build on their knowledge from Introduction to Engineering with higher level circuit projects. A minimum of three intermediate projects will be completed involving CAD designing, soldering and programming Arduinos in C++.

Students will develop the following skills throughout this course:

1. Arduino programming to control circuits
2. Advanced design projects using 3D printers, laser machine and CNC machine
3. Advanced CAD design with SketchUp and Fusion 360

Advanced Engineering (Semester)

Grades 9-12

This course continues to build on concepts learned in Introduction to Engineering and Intermediate Engineering. New concepts learned will include Raspberry Pis, advanced level Fusion 360 and PCB design. Students will choose a project(s) of their choice to work on independently.

Students will develop the following skills throughout this course:

1. Work independently, troubleshoot and problem solve projects
2. Use design thinking to solve problems
3. Perseverance

JavaScript I/II (Semester)

Grades 9-12

Introduction to Computer Science in JavaScript teaches the foundations of computer science and basic programming in JavaScript. Beginning with how a computer and the binary number system works, students get a foundation to move on to learn basic programming. This course introduces students to HTML before moving into the main focus of programming in JavaScript which is the programming language commonly used to create interactive effects within web browsers. The primary emphasis will be on helping students develop logical thinking and problem solving skills as they learn the JavaScript language. Enrollment in Honors JavaScript will be explained during the first quarter of the course.

Students will develop the following skills throughout this course:

1. Understanding of core programming concepts like variables, loops, and functions

2. Basic HTML and CSS
3. Logical thinking and problem solving

Python I/II (Semester)

Grades 9-12

The Python curriculum teaches the foundations of computer science and basic programming, with an emphasis on helping students develop logical thinking and problem solving skills. Python is a general purpose programming language used for a wide range of tasks including testing microchips at intel, powering Instagram and building video games. Enrollment in Honors Python will be explained during the first quarter of the course.

Students will develop the following skills throughout this course:

1. Understanding of core programming concepts like functions, loops, and conditional statements
2. Creating and altering data structures
3. Logical thinking and problem solving

Video Game Design (Semester)

Grades 10-12

This semester course teaches students the fundamentals of game design by using Unity's game engine. By the end of this course, students will understand the design planning process, be knowledgeable of industry related careers, and be able to navigate the Unity environment in order to create their own 3D games. This course will prepare students for the second semester course of Game Design in Unity. Note: student devices must be able to download and install the Unity platform (not compatible on Chromebooks).

Students will develop the following skills throughout this course:

1. Programming in C++
2. Combine art, animation and design techniques
3. Empathy - ability to understand and relate to players

Web Design (Semester)

Grades 10-12

The Web Design course is a project-based course that teaches students how to build their own web pages. Students will learn the languages HTML and CSS, and will create their own live homepages to serve as portfolios of their creations. By the end of this course, students will be able to explain how web pages are developed and viewed on the Internet, analyze and fix errors in existing websites, and create their very own multi-page websites.

Students will develop the following skills throughout this course:

1. HTML and CSS to structure and style websites
2. Visual design principles
3. Attention to detail and problem solving

ADDITIONAL COURSE OFFERINGS

Advanced Fitness (Semester) - Physical Education Elective Grades 9-12

Advanced Fitness is a sports-specific strength and conditioning program. Foundational weight-lifting movements including the squat, press, clean, and deadlift will be taught. Technique will come before intensity. Agility, balance, coordination, and endurance will comprise the conditioning aspect of the program.

Students will develop the following skills throughout this course:

1. Strength and power development
2. Athletic conditioning
3. Safe and effective training practices

Entrepreneurship (Semester) - Business Elective Grades 11-12

This hands-on, semester-long course guides students through the full process of launching a brand, from initial idea to market-ready product. Students will combine creativity and business skills by conducting product research, designing a brand, mastering financial modeling with spreadsheets, and building a professional digital presence through a custom website and Instagram strategy. The course culminates in a real-world test: launching the brand and selling inventory at the Christmas Market (after Thanksgiving break). Students will leave with a tangible portfolio of digital assets and the experience of managing a successful product launch.

Note: participation requires work outside of class time.

Students will develop the following skills throughout this course:

1. Product innovation and quality control
2. Financial management and operations strategy
3. Digital branding and marketing positioning

Health (Self-Paced Modular Course) Grades 9-12

This Health Education course provides students with essential knowledge on mental health, personal safety, eating disorders, healthy habits, disease prevention, and substance abuse. Through interactive lessons, students will develop skills to manage stress, make informed choices, and adopt lifelong wellness practices. The curriculum also covers strategies for injury prevention, nutrition, and the risks associated with drug and alcohol use. Students may complete the eADAP (Electronic Alcohol and Drug Awareness Program) before or after finishing the modular Health curriculum, which is required for those applying for a Georgia driver's permit.

Students will develop the following skills throughout this course:

1. Stress management and emotional resilience
2. Decision making for personal safety and disease prevention
3. Critical thinking to assess health risks related to nutrition, substance use, and lifestyle choices

Introduction to Business (Semester) - Business Elective Grades 9-12

This course provides opportunities to learn and experience a

variety of topics in the field of business. Students are exposed to various economies, their roles in our economy, entrepreneurship, marketing, managing financial and technological resources, and the use of social media. Course activities involve students in writing, investigating, problem-solving, demonstrating, and reporting. Students will also utilize an online learning environment.

Students will develop the following skills throughout this course:

1. Business and economic literacy
2. Critical Thinking and problem solving
3. Digital and communication skills