Frederica Academy

Upper School Course Descriptions

2019-2020

Upper School Motto

"To whom much is given, much is expected."

Frederica Academy Mission

To maximize each student's potential and prepare him or her for college and adult life through the development of mind, body, and spirit.

Frederica Academy Graduation Requirements

		English	Foreign Lang.	Math	Science	Social Science	Fine Arts	PE and Electives
FA Expectations:		4	3 consec.	4	4	4	1	Health
All students must take 6 classes each semester (5 academic).								
GA University/State Reqs:		4: □ World □ US □ □	2 of the same	4: □ Alg I □ Geom □ Alg II □ Adv Math	4: □ Bio □ Phys/Phys Sci □ Chem □	3: □ US Studies □ World □	1	
HOPE Scholarship Reqs:		3.0 in Core subjects + Rigor Requirements by Year						
Zell Miller Reqs:		3.7 GPA in Core Subjects, 1200 SAT (Crit Read & Math)or 26 ACT on a single test date, + Rigor Requirements by Year						

FREDERICA ACADEMY UPPER SCHOOL COURSE DESCRIPTIONS

ENGLISH

ENGLISH CORE OFFERINGS

World Literature I (Full Year) - 9th Grade

The ninth grade World Literature is designed both to introduce students to a high school level of reading and writing and to teach students how to think and speak about literature in a more mature way. While "World Literature" is a massive area, the texts students study are part of a larger conversation that represents the basis of modern literature, film, and advertising. Students will strive to decode the layers of meaning in each text and discuss how each work is part of the larger landscape of life and the human continuum of ideas. Furthermore, students will evaluate how the individual texts represent and reveal the mores of the cultures from which they originate. Students also will be given a thorough overview of how archetypes are used to connect the reader and text, as well as the writing process as it relates to creating literary analyses and arguments.

The student will:

- Demonstrate the ability to recognize, analyze, and evaluate the inclusion and purpose of literary patterns, allusions, and archetypes within and between texts.
- Analyze how authorial choices and the manipulation of language construct the thematic arguments of literary works representative of a variety of time periods, genres, and styles.

- Discuss their individual reading of literary works by participating in class discussion in a mature and respectful manner.
- Recognize and emulate elements of good writing, including but not limited to the adherence to grammatical and formatting expectations.
- Write coherent, well-developed essays that defend a clearly defined argument and are supported by effectively integrated textual evidence drawn from through the literary text.

World Literature II (Full Year) - 10th Grade

This course offers an introduction to literature of the world from the Renaissance to the present day. A major goal of the course is to recognize the common experiences and threads that unite humanity across time and space. Students will also explore cultural and historical backgrounds in order to better understand the literature. Through the study of novels, short stories, plays, nonfiction essays, and poetry, students will examine both classic and less familiar authors. The course also focuses on developing strong academic skills through writing, research, and the study of vocabulary. Several analytical essays over major works will be assigned each semester. Students will continue to refine papers through an independent draft process and will focus on both refining grammatical errors and developing self-generated arguments and analysis. Class discussion will also be a major component of the course in order to hone critical thinking skills.

The student will:

- Continue to deepen analysis of literary themes, techniques, and archetypes across texts from a variety of cultures and time periods.
- Seek to understand the cultural/historical context in which literary works are created and popularized, including gaining an understanding of major literary movements from the Renaissance to the present.
- Undertake both individual and group projects that require outside research, synthesis, and creative presentation.
- Deepen understanding of literary analysis and argument through individually undertaking essays that require a strong thesis, clear textual support, and maturing investigation and evaluation of the text.
- Continue to use regular feedback to fine-tune self-directed editing, proofreading, and polishing skills for writing.
- Find enrichment and personal connections through literature.

American Literature (Full Year) - 11th Grade

Beginning with the Puritans and working forward to modern literature, American Literature is a course designed to survey some of the most renowned authors of our country, to analyze some of the most compelling issues of our times, and to evaluate how our country's history has influenced and shaped the stories defining the times, places, and peoples of its nation. Our country is a land of many narratives and a multitude of voices. From the very beginning—the folklore, sermons, pamphlets, dairies, poetry, speeches, letters, short stories, novels, newspapers, and nonfiction—America's voice has been one defined by persuasion. Perhaps America has never

stood behind a single podium nor used a single voice; indeed, absolute conformity and agreement run counter to the blood shed for her formation, protection, and survival. Persuasion is built upon the knowing your subject, your audience, and the form of discourse. Understanding how language conveys meaning is essential in analyzing literature and in writing about literature. Therefore, in addition to evaluating good writing, we will concentrate on strengthening writing skills and grammar, focusing on analytical essays supported with textual evidence and analysis.
The student will:

- Discuss their individual reading of literary works by participating in class discussion in a mature and respectful manner.
- Write coherent, well-developed essays that defend a clearly defined argument and are supported by effectively textual evidence.
- Deepen analysis of literary themes, techniques, and literary devices across texts.
- Students will seek to understand the cultural/historical context in which literary works are written, including gaining an understanding of major literary movements from Puritanism to Modernism.

AP English Language and Composition (Full Year) - 11th Grade
Students in the Advanced Placement English Language and Composition course read, analyze, and work with literature, essays, letters, speeches, and images to deepen their awareness of rhetoric and of how language works to construct persuasive arguments. Students should be prepared to read and analyze a wide range of texts and to write prose of sufficient richness and complexity to communicate effectively with mature readers. *(Prerequisite: teacher recommendation)*

The student will:

- Discuss their individual reading of literary works by participating in class discussion in a mature and respectful manner.
- Write coherent, well-developed essays that defend a clearly defined argument and are supported by effectively integrated textual evidence drawn from through the literary text.
- Deepen analysis of literary themes, techniques, and archetypes across texts.
- Students will seek to understand the cultural/historical context in which literary works are created and popularized, including gaining an understanding of major literary movements from Puritanism to Modernism.
- Evaluate how the rhetorical choices, structure, and narrative elements construct and convey textual arguments.
- Write essays that require a strong argument, effective textual support, and maturing evaluation and synthesis of the text.
- Continue to use regular feedback to fine-tune self-directed editing, proofreading, and polishing skills for writing.

AP English Literature and Composition (Full Year) - 12th Grade

AP Literature and Composition engages in careful reading and critical analysis of literature; our literary analysis will consider a writer's style and the structure of the work. Students are expected to justify their interpretations of the readings by references to details and patterns in the text, to compare their interpretations with those proposed by others (teachers, classmates, and literary scholars), and to be prepared to modify their own interpretations as they learn more and think more. Writing is a major emphasis in this course, and most of it will focus on analytic essays about literature and AP test preparation. The aim of the course is to prepare students for both the College Board exam in May and for the rigors of college work. *(Prerequisite: teacher recommendation)*

The student will:

- Read, discuss, and analyze various works from different genres and periods in order to interpret and evaluate not only the author's choices in the work but also work's social relevance.
- Read, discuss, and analyze poetry from the 16th century to the 21st century in order to evaluate not only the poet's craft but also to evaluate the richness of the poem in evoking both personal connection and empathetic understanding.
- Read texts, collecting textual clues, and making connections that lead to an interpretive meaning.
- Write essays that require a strong argument, effective textual support, and maturing evaluation and synthesis of the text.
- Continue to use regular feedback to fine-tune self-directed editing, proofreading, and polishing skills for writing.

Literature and Composition 12 (Full Year) - 12th Grade

The focus for this senior level class is on the critical reading of both literary and non-literary texts. Students will study texts from various genres including the short story, poetry, novels, non-fiction articles/journals, and media advertisements/speeches. Works covered in this class may include: *1984*, *Shoeless Joe*, *Unbroken*, *The Kite Runner,* and a selection of poetry by numerous poets and songwriters. Students in this course are expected to undertake a study of the literary elements of these works and will be required to complete a variety of written and oral assignments designed to hone their writing, oral and critical thinking skills. Students will be encouraged to work independently, researching issues and themes arising in the texts studied. This research affords students the opportunity to explore areas of interest beyond, yet inspired by, classic texts. The findings of such independent research and study will be presented to the class, using a medium and format of choice (Ex. artistic or musical representation, PowerPoint, podcast and/or written document). In this way, the multiple talents of students will be encouraged and students will have the opportunity to manage their own learning in preparation for their post-secondary studies.

In addition to exploring issues and themes of interest, students will also begin to understand and refine the craft of writing. We will work to acquire and enhance the skills needed to be successful with writing tasks in all classes. It is the aim of this course to prepare students for they types of writing that will be required throughout their post-secondary schooling including essays, reflections, reports, articles, and online discussion posts

English Electives

Southern Literature (One Semester) - 11th and 12th Grade - *based upon availability*

Renowned for its haunted characters and stark landscapes, the literature of the American South has captivated readers and critics for over a century. This semester-long, elective course investigates the complexities and mystique of the South's distinct literature and culture. Although students will only be exposed to a small sample of texts and time periods, the course will attempt to answer the following questions:

- What are the defining features of Southern literature?
- What can the study of Southern literature reveal about contemporary American issues/conflicts?
- How do Southern settings influence and determine narratives?
- Why has Southern literature endured as a favored subgenre of American literature?

Through our study of Southern literature, students will confront the prominent spheres of Southern culture such as race, Christianity, gender, sex, social class, and family. As current residents of the South, students will also attempt to reconcile their own perspectives on the region with those presented in the texts. Students will craft critical essays in which they defend their interpretations of the course texts. Major texts studied may include *The Ballad of the Sad Cafe* by Carson McCullers, *Salvage the Bones* by Jesmyn Ward, and *A Streetcar Named Desire* by Tennessee Williams, along with several short stories by Flannery O'Connor and William Faulkner.

FOREIGN LANGUAGE

SPANISH OFFERINGS

Spanish I (Full Year)

The first year course in Spanish language 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.

The student will:

- Communicate effectively in present tense.
- Understand native speakers in brief discourse.
- Read beginner level authentic texts.

- Write basic compositions in target language.
- Understand basic cultural traditions and customs.

Spanish II (Full Year) *(Honors Spanish II available for freshmen students who have met prerequisites)*
Students will learn theme-based vocabulary and will integrate that vocabulary with grammatical concepts in real-life situations through writing stories, creating projects, performing skits, giving formal and informal presentations, and through image descriptions. The class is taught exclusively in Spanish and students are expected to participate orally every class period. *(Prerequisites: Spanish I)*

The student will:
- Communicate effectively in the past tense.
- Understand lengthier, more complex discourse.
- Read intermediate level authentic texts.
- Write compositions using past tense and more complex constructions.
- Develop further understanding of traditions and customs.
-

Spanish III (Full Year) *(Honors Spanish III available for sophomores who have met prerequisites)*
In Spanish III, students will continue to develop their communicative, written, and listening skills. Students are formally introduced to the study of Hispanic literature and culture. They use complex structures in Spanish and move from concrete to more abstract concepts. Students develop the ability to discuss topics related to historical, art, and contemporary events through projects, videos, and movies, using only Spanish. *(Prerequisites: Spanish II)*
The student will:
- Communicate using future, conditional and present subjunctives.
- Understanding more complex discourse.
- Read intermediate level authentic text.
- Write significantly more complex compositions and utilize a variety of tenses.
- Develop further understanding of traditions and customs.

Honors Spanish IV (Full Year)
The fourth year in the Spanish sequence is designed to foster mastery of the remaining grammar structures. Spanish is used almost exclusively as the medium of communication in the classroom. Students will work on improving reading comprehension and writing skills at a more advanced level. Hispanic writers, YouTube videos, movies, and a multimedia text will be used to examine cultural topics. *(Prerequisites: Spanish III)*

The student will:

- Communicate using all tenses and complex constructions.
- Understand and interpret current events and global themes and advanced discourse.
- Read advanced texts from contemporary Hispanic authors.
- Write comfortably using advanced constructions and extensive vocabulary.

AP Spanish (Full Year)
The AP Spanish Language and Culture course, which is designed around themes, takes a holistic approach to language proficiency. Students are encouraged to learn language structures and to apply them in context through meaningful conversation. Students are required to take the AP exam at the conclusion of this course. *(Prerequisite: Spanish IV and teacher recommendation)*

The student will:

- Communicate using all tenses and complex constructions.
- Understand and interpret current events and global themes and advanced discourse.
- Read advanced texts from contemporary Hispanic authors.
- Write comfortably using advanced constructions and extensive vocabulary.
- Speak, read, write, and understand at an advanced level in accordance with the AP syllabus.

LATIN OFFERINGS

Latin I (Full Year)

The first year of Latin introduces students to the fundamentals of the Latin language through comprehensible oral and written input. The stories we cover will also introduce some facts about the ancient Roman world. Over the course of the year, students should acquire a basic working vocabulary, grammar, and syntax as they practice reading, writing, speaking, and listening in Latin. At the end of the year, students should have reached a high-novice to low-intermediate level of proficiency and be ready to approach more complex readings in the second year.

The student will:

- Read and comprehend novice level texts.
- Identify correct and incorrect statements about a text they have read.
- Respond to verbal prompts and communicate using short stock phrases and idioms.
- Understand simple Latin read aloud and spoken in short phrases.
- Understand relevant cultural traditions and customs.

Latin II (Full Year) *(Honors Latin II available for freshmen students who have met prerequisites)*

This course builds on the previous one in developing a broader working vocabulary and facility with the language through exposure to comprehensible oral and written input. Readings will continue to introduce students to the culture and history of the ancient Roman world, including Greco-Roman mythology. By the end of the year, students should have reached an intermediate-mid level of proficiency and be ready for more native-like texts. *(Prerequisite: Latin I)*

The student will:

- Read and comprehend intermediate level texts.
- Write original responses in the target language about texts they have read.
- Respond to extemporaneous oral questions in a familiar context.
- Understand spoken Latin to a moderate degree of complexity.
- Develop further understanding of cultural traditions and customs.

Latin III (Full Year) *(Honors Latin III available for sophomores who have met prerequisites)*
In this course students continue to be exposed to comprehensible oral and written input, including intermediate-level texts that are more native-like in their vocabulary and syntax. By the end of the year, students should have acquired enough of the language to comprehend and appreciate authentic Latin literature. Texts of the year, students should have reached an intermediate-high level of proficiency and be prepared for Latin IV and a deeper study of Latin literature. *(Prerequisite: Latin II)*

The student will:

- Read more native-like texts in multiple genres.
- Identify not only the literal but also the implicit meaning of a text they have read.
- Ask and answer basic questions about the text in the target language.
- Be able to summarize the content of a text while remaining in the target language.
- Develop further understanding of history and customs as they relate to the readings.

Honors Latin IV (Full Year)
This course continues in the same vein as Latin III, including a greater share of Latin texts from different eras, but with more attention paid to the nuances of style, genre, rhetoric and meter, and to the specific characteristics of individual authors. We will also consider the historical context of these authors and their works, as well as their legacy. By the end of the year, students should have the skills they need to continue their Latin study on their own, using the resources available to them, and be able to discuss the scope of the Latin literary tradition and its importance to the modern world. *(Prerequisite: Latin III)*

The student will:

- Read Latin prose and poetry in multiple genres and from multiple time periods.
- Navigate advanced grammar, vocabulary, and rhetorical and poetic conventions.
- Ask and answer basic questions about the text in the target language.
- Understand Latin read aloud and spoken.
- Develop further understanding of history and customs, especially as related to the texts.

AP Latin (Full Year) - *based on availability*
This course is designed to complete the entire AP Latin syllabus as outlined in the AP Latin Course Description over the course of the year. Based on those requirements, students will read selections from Caesar's *De Bello Gallico* and Vergil's *Aeneid*, along with supplemental texts

chosen by the teacher. Class time will be devoted to analysis and critical interpretation of the required Latin passages as well as examination of the historical, social, cultural, and political context of these authors. Students will also practice reading unprepared passages in Latin, identifying the influence of Latin literature on the artistic achievements of the modern world, and responding to the types of questions found on the AP exam.
(Prerequisite: Latin IV and teacher recommendation)

The student will:

- Read the authentic text of Caesar, Vergil, and others.
- Discuss works from linguistic, literary, and historical standpoints.
- Ask and answer questions about the text in the target language
- Understand Latin read aloud and spoken.
- Develop further understanding of the cultural context and legacy of these works.

MATHEMATICS

MATHEMATICS CORE OFFERINGS

Algebra I (Full Year)
This course is a study of the basic algebra concepts, with emphasis on simplifying numeric and algebraic expressions, solving equations, factoring techniques, and solving various types of word problems, including but not limited to percents and proportions. It is also an introduction to functions and graphing both linear and quadratic equations and inequalities. Solving and graphing systems of equations and inequalities are also introduced, as well as operations with radical and rational expressions. The final concepts deal with quadratic functions and formulas readily used to be successful in Geometry. *This course is for any student entering high school who has not passed Algebra I with an 85 or higher.*

The student will:

- Write, simplify and evaluate numeric and algebraic expressions: linear, quadratic, polynomial, rational, radical.
- Solve linear, quadratic rational and radical equations, linear inequalities and linear systems in two variables.
- Graph and interpret graphs of various equations and functions both with and without the calculator: linear, quadratic, inequalities, linear systems.
- Add, subtract, multiply, divide, and factor polynomials and functions.
- Exercise proficiency in calculator use of these mathematical concepts.
- Develop skills for added success in college entrance exams.

Geometry (Full Year) *(Honors Geometry available for advanced students who have met prerequisites)*

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 inductive and deductive reasoning, formal proofs, angle relationships, perpendicular lines, parallel lines and planes, congruent triangles, properties of polygons and special quadrilaterals, similar polygons, similarity and right triangles, right triangle trigonometry, circles, areas of polygons and circles, surface area and volume of solids, and coordinate geometry. *(Prerequisite: Algebra I)*

The student will:

- Learn and use the basic building blocks of geometry: points, lines, planes, polygons, solids and composite figures.
- Master the difference between inductive and deductive reasoning in order to understand and write proofs as well as solve multi-step problems.
- Use Algebra I skills as the means for solving multi-step geometry problems.
- Deepen mathematics and geometry vocabulary, theorems and postulates that are necessary for understanding and solving problems that do and do not contain visual aids.
- Exercise proficiency in calculator use of these mathematical concepts.
- Develop skills for added success in college entrance exams.

Algebra II (Full Year) *(Honors Algebra II available for advanced students who have met prerequisites)*

This is a two-semester sequential course that reviews and extends the concepts and skills obtained during the Algebra I and Geometry series. This course includes simplifying expressions, solving equations and inequalities, sequences and series of real numbers, linear functions and relations, systems of linear equations in two and three variables, polynomials and their factors, rational algebraic expressions and equations, radical expressions and equations, quadratic equations, complex numbers, rational and irrational exponents, logarithms, quadratic relations and systems, conics and basic trigonometric functions, and operations to help prepare the student for the next level of mathematics.

The student will:

- Write, simplify and evaluate algebraic expressions: linear, quadratic, polynomial, rational, radical, logarithmic, exponential, trigonometric.
- Solve linear, quadratic, polynomial, rational, radical logarithmic, exponential and trigonometric equations. Several types of inequalities and linear/nonlinear systems.
- Graph and interpret graphs of various equations and functions both with and without the calculator: linear, quadratic, conic, rational, radical equations, inequalities, trigonometric.
- Add, subtract, multiply, divide, and factor polynomials, functions and inverse functions.
- Exercise proficiency in calculator use of these mathematical concepts.
- Develop skills for added success in college entrance exams.

Precalculus (Full Year)
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, conic sections, trigonometric functions and identities, triangular applications, and vectors. *(Prerequisites: Geometry and Algebra II)*

The student will:

- Solve various functions, such as linear, power, exponential, logarithmic, and trigonometric functions both algebraically and graphically.
- Solve systems of equations and inequalities of two and three variables algebraically and graphically.
- Analyze graphs of different functions by finding zeros, maximum and minimum values, intervals of increasing and decreasing values.
- Master the use of the unit circle in evaluating trigonometric functions.
- Solve problems through the applications of trigonometric functions.
- Learn and apply trigonometric identities and formulas.
- Exercise proficiency in calculator use of these mathematical concepts.
- Review skills for added success in college entrance exams.

Honors Precalculus (Full Year)
Honors 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. *(Prerequisites: Geometry and Algebra II)*

The student will:

- Solve various functions, such as linear, power, exponential, logarithmic, and trigonometric functions, both algebraically and graphically.
- Solve systems of two and three variables algebraically, graphically, and by using matrices.
- Analyze graphs of different functions by finding zeros, maximum and minimum values, intervals of increasing and decreasing values, and asymptotes.

- Analyze the graphs of conics.
- Master the evaluation of trigonometric functions and the application of trigonometric identities and formulas.
- Understand and develop formulas for types of sequences and series.
- Learn the basics of combinatorics and simple probability.
- Exercise proficiency in calculator use of these mathematical concepts.
- Review skills for added success in college entrance exams.

Calculus (Full Year)

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. *(Prerequisite: Precalculus)*

The student will:

- Find limits, derivatives and integrals of functions and evaluate them at specific points.
- Solve various application problems: related rates, marginal productivity, cost and revenue functions.
- Exercise proficiency in calculator use of these mathematical concepts.
- Review skills for added success in college entrance exams.

AP Calculus AB (Full Year)

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, 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. *(Prerequisite: Honors Precalculus & teacher recommendation)*

The student will:

- Master the skills for finding limits, determining continuity of a function, evaluating derivatives and integrals, and using derivatives to analyze functions.
- Solve and interpret answers for various application problems, including optimization, related rates, marginal cost and revenue, areas, and volumes.
- Analyze multi-part questions (FRQs) by applying several of the above concepts and interpreting results in clear and appropriate terms.
- Exercise proficiency in calculator use of these mathematical concepts.
- Review skills for added success in college entrance exams.

AP Calculus BS (Full Year)

MATHEMATICS ELECTIVES

AP Statistics (Full Year)

AP Statistics course is equivalent to a one-semester, introductory, non-calculus-based college course in statistics. Students are introduced to concepts and tools for collecting, analyzing, and drawing conclusion from data. The four themes of the course are: exploring data, sampling and experimentation, anticipating patterns, and statistical inference. Specific topics include techniques to explore, visualize, and describe data, modelling distributions of data, describing relationships between variables, designing studies (sampling, surveys, and experiments), probability rules and distributions, random variables, normal distribution, sampling distributions, sample proportions and sample means, confidence intervals, tests of significance, comparing two populations or groups, inference for distributions of categorical data, and linear regression.

The student will:

- Explore data by describing patterns and departures from patterns.
- Plan and conduct statistical studies through sampling and experimentation.
- Explore random phenomena and anticipate patterns using probability and simulation.
- Estimate population parameters and testing hypotheses by way of statistical inference.
- Exercise proficiency in calculator use of these mathematical concepts.

SCIENCE

SCIENCE CORE OFFERINGS

Biology (Full Year) *(Honors Biology available for Freshmen with teacher recommendation)*

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.

The student will:

- Perform graphical and statistical analysis of data involved with living systems.
- Develop a specific working knowledge of living systems at the cellular, organismal, and ecological levels.
- Use microscopy and other scientific tools to analyze living systems.

Physical Science (Full Year)

The Physical Science course seeks to instill an appreciation of the orderliness of the natural world as expressed in the laws of chemistry and physics. The first semester covers topics in physics, such as motion, forces, energy and work, simple machines, heat energy, electricity and magnetism, and sound and light waves. The second semester covers topics in chemistry, such as basic atomic structure, the periodic law and periodic relationships, atomic bonding, chemical reactions, solutions, and organic chemistry.

The student will:

- Use the scientific methods / processes.
- Develop a conceptual view of the nature of matter, forces, and energy.
- Master laboratory techniques.

Chemistry (Full Year) *(Honors Chemistry available for sophomores with teacher recommendation)*

Chemistry is a yearlong course that introduces chemistry to students. It presents basic chemistry concepts without rigorous mathematics, although basic math skills are needed. The student will have a solid chemistry background necessary to continue in science. Topics include basic atomic theory, the periodic law, periodic relationships, basic bonding and molecular geometry, mole theory, stoichiometry, basic gas laws, solutions, thermochemistry, equilibrium, and acids and bases.

The student will:

- Perform dimensional analysis and calculate quantities involving matter and energy.
- Understand the nature and behavior of matter.
- Proficiency in laboratory techniques.

AP Biology (Full Year)

AP Biology is a year long 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. *(Prerequisite: teacher recommendation)*

The student will:

- Perform graphical and statistical analysis of data involved with living systems.
- Develop a specific working knowledge of living systems at the cellular, organismal, and ecological levels.
- Use microscopy and other scientific tools to analyze living systems.

Physics (Full Year)
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 concentrates on Newtonian Mechanics. 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 concentrates on electricity and magnetism, wave behavior, sound and light, and quantum theory. *(Prerequisite: Algebra II)*

The student will:

- Analyze data to recognize relationships between variables.
- Derive equations from data and use those equations for solving problems.
- Apply physics laws to real world phenomena.

AP Physics 1 (Full Year)
AP Physics 1 is an algebra-based, introductory college-level physics course that explores topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills. This course requires that 25 percent of the instructional time will be spent in hands-on laboratory work, with an emphasis on inquiry-based investigations that provide students with opportunities to apply the science practices.
(Prerequisite: Algebra II & teacher recommendation)

The student will:

- Analyze data to recognize relationships between variables.
- Derive equations from data and use those equations for solving problems.
- Apply physics laws to real world phenomena.

AP Chemistry (Full Year)
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.

The student will:

- Learn the inquiry process through numerous laboratory investigations.
- Apply mathematical and scientific knowledge and skills to solve quantitative, qualitative, spatial, and analytic problems.
- Formulate strategies for the development and testing of hypotheses.
- Use manipulative and technological tools including the Texas Instruments Nspire CAS CX
- Handhelds, Vernier LabQuests, Vernier Probes, and Vernier's LoggerPro software.
- Do scientific research and report and display the results of this research.
- Learn to think critically in order to solve problems.

SCIENCE ELECTIVES

Anatomy (Semester)

Anatomy is a one semester class in which each student will learn about the human body and its mechanisms, from cells to tissues to organs to systems to that of the body as a whole. Each body system and its corresponding anatomical terminology are covered. Clinical terms and pathology for each system are reviewed as well. This is an excellent course for students interested in biology and medicine and planning on investigating those fields in college. A significant portion of the course will be devoted to work in the laboratory.

The student will:

- Acquire a working vocabulary of anatomical structures.
- Acquire a working knowledge of physiological processes.
- Gain exposure to various organs and specimens through lab dissection and examination.

Astronomy (Semester)

Astronomy is a one-semester survey class in which students will learn about planets, stars, galaxies, the universe, nebulae, pulsars, quasars, supernovas, telescopes, absorption spectra, gravity, the sun, earth's movements, seasons, star charting, and other astronomical phenomena. Students will follow an online textbook and spend some time in the laboratory, as well as spend several nights each semester using telescopes and binoculars for sky observation. This course is highly recommended for students interested in pursuing college study in the sciences.

The student will:

- Understand the formation and evolution of our sun and our planetary system.
- Understand the formation and evolution of our galaxy and universe as a whole.
- Use modeling, naked eye, and telescopic observation to detect and understand astronomical objects and events.

JavaScript I/II

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. Students will:

- Understand how to use data structures, functions and control structures in programming.
- Understand basic syntax for JavaScript programs.
- Think analytically in order to solve problems.
- Evaluate solutions and problem solve.

Cybersecurity I/II

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:

- Understand digital citizenship and cyber hygiene.
- Understand the basics of software security, cryptography and networking fundamentals.

Engineering I/II

Students will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges that increase in difficulty throughout the course. Students will:

- Work with breadboard electronics
- Solder circuits
- Program with Arduinos and Raspberry Pis
- Design and print in 3D

Python

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 use for a wide range of things including testing microchips at intel, powering Instagram and building video games. Students will:

- Understand how to use the console, conditionals, looping, functions, exceptions, data structures and strings.
- Understand the basic syntax for Python programs.
- Think analytically in order to solve problems.
- Evaluate solutions and problem solve.

AP Computer Science A

The AP Java course is a year-long course designed to help students master the basics of Java and equip them to successfully pass the College Board AP Computer Science A Exam at the end of the school year. Students will:

- Design and implement computer-based solutions to problems.
- Use and implement commonly used algorithms.
- Select appropriate algorithms and data structures to solve problems
- Code fluently in an object-oriented paradigm using the programming language Java.
- Use the elements of the standard Java library from the AP Java subset in Appendix A of the AP Computer Science A Course Description.
- Recognize the ethical and social implications of computer use

Marine Biology (Semester)

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..

The student will:

- Acquire a historical perspective of marine biology research and current knowledge base.
- Gain exposure to tools and devices used in marine research.
- Use devices and equipment to analyze and experiment on the local marine environment.

SOCIAL SCIENCES

SOCIAL SCIENCES CORE OFFERINGS

World History I (Full Year)

This course focuses on early and classical civilizations of Asia, Africa, Europe, and the Americas, through approximately 1500 C.E. Key topics include the emergence of civilization and the development of agriculture, economics, political systems, imperialism, literature, philosophy, and religion. The course will also focus on the study habits, critical thinking, and writing skills necessary for success in future history courses.

The student will:

- Analyze the impact of geography upon historical events.
- Analyze and evaluate historical sources and use them in historical interpretation.
- Engage in class discussion of assigned readings and practice effective reading comprehension and notetaking skills.
- Write analytical essays that compare and trace changes and continuities over time, including the development of an argumentative thesis and the use of evidence to support the argument.
- Further develop an understanding of the characteristics and diversity of world cultures.

World History II (Full Year)

This tenth grade history course examines the modern world from 1500 C.E. to the present. Topics will include: early modern economic systems and the age of kings; political revolutions; industrialization; imperialism; nationalism; the world wars; decolonization; the role of international organizations, and the world in the twenty-first century. Special emphasis is given to the development of argumentative essay writing and historical thinking skills like synthesis, contextualization and point-of-view. Prior completion of World History I, which spans human prehistory up to the Renaissance is recommended but is not required.

The student will:

- Analyze historical sources and use them in historical interpretation.
- Engage in class discussion of assigned readings.
  Develop effective reading comprehension and note taking skills.
- Write analytical essays that compare and trace changes and continuities over time, including the development of an argumentative thesis and the use of evidence to support the argument.
- Further develop one's understanding of the characteristics and diversity of world cultures.

AP World History: Modern (Full Year)

In AP World History: Modern, students investigate significant events, individuals, developments, and processes from 1200 to the present. Students develop and use the same skills, practices, and methods employed by historians: analyzing primary and secondary sources; developing historical arguments; making historical connections; and utilizing reasoning about comparison, causation, and continuity and change over time. The course provides six themes that students explore throughout the course in order to make connections among historical developments in different times and places: humans and the environment, cultural developments and interactions, governance, economic systems, social interactions and organization, and technology and innovation.

The student will:

- Identify key cultural regions around the world, and the interaction of environment and technology upon historical events.
- Interpret and analyze primary sources and use these sources to develop an analytical essay that seeks to explain historical events and processes.
- Write analytical essays that compare regions and trace changes and continuities across time, and that require interpretation and analysis of primary source evidence, including the development of an argumentative thesis and the use of evidence to support the argument.
- Engage and lead class discussion of assigned readings.
- Continue to hone effective reading and notetaking skills.
- Use evidence from multiple civilizations to demonstrate understanding of historical processes.

United States History (Full Year)

This eleventh grade history course covers the history of the United States from the beginning of English settlement in North America to the modern era. Political, economic, and social factors that have shaped the pattern of life in, and the institutions of the United States are given careful consideration. Special emphasis is given to the development of argumentative essay writing and historical thinking skills like synthesis, contextualization and point-of-view.

The student will:

- Develop skills in identifying historical causation, continuity and change over time, historical periodization, compare and contrast arguments and understanding historical events in context.
- Make historical connections across time or between different contemporary events (synthesis)
- Interpret historical events and form essay arguments using historical events as evidence.
- Hone thesis writing and other essay skills.

AP U.S. History (Full Year)

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 for effective 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. Solid reading and writing skills and the willingness to devote considerable time to homework and study are necessary for success. Students are expected to become independent, active learners, and to accept responsibility for reading and understanding a variety of readings outside of class. *(Prerequisite: teacher recommendation)*

The student will:

- Develop skills in identifying historical causation, continuity and change over time, contextualization, compare and contrast arguments, and understanding historical events in context.
- Make historical connections across time or between different contemporary events.
- Interpret historical events and form essay arguments using historical events as evidence.
- Hone thesis writing and other essay skills.
- Develop the ability to answer document-based question by using primary and scholarly secondary sources.

SOCIAL SCIENCES ELECTIVES

AP US Government & Politics (Semester)

AP Government and Politics is a semester course designed to provide students with an analytical perspective on government and politics in the United States, culminating in the AP National Exam given in May. 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 student will:

- Demonstrate knowledge of the political philosophies that shaped the development of United States constitutional government.
- analyze the natural rights philosophy and the nature of government expressed in the Declaration of Independence.

- Demonstrate knowledge federal system of government described in the United States Constitution**.**
- Explain the differences between the House of Representatives and the Senate with emphasis on terms of office, powers, organization, leadership, and representation of each house.
- Describe the influence of lobbyists (business, labor, professional organizations) and special interest groups on the legislative process.
- Analyze the various roles played by the President of the United States, qualifications to become president, and explain the functions of the departments and agencies of the federal bureaucracy.
- Demonstrate knowledge of the operation of the federal judiciary and the knowledge of civil liberties and civil rights.
- Describe the tools used to carry out United States foreign policy (diplomacy, economic, military and humanitarian aid, treaties, sanctions, and military intervention).
- Gain an understanding of a higher level questioning.
- Compare and contrast multiple governments and how these governments and countries affect our global society.
- Develop advanced writing skills by answering numerous essays questions.

AP Comparative Government and Politics (Semester)

AP Comparative Governments is a semester course designed to introduce students to the rich diversity of political life outside the United States, culminating with the AP Exam given in May. Students may earn college credit for the course, depending on the policies of their chosen college. The course uses a comparative approach to examine the political structures; policies; and 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.
Students compare and contrast political institutions and processes across six countries (Great Britain, Mexico, Russia, Iran, China, and Nigeria) and analyze and interpret data to derive generalizations. Topics include: Introduction to Comparative Politics; Sovereignty, Authority, and Power; Political Institutions; Citizens, Society, and the State; Political and Economic Change; Public Policy.

The students will:

- Compare and contrast political concepts, themes, and generalizations.
- Describe and explain typical patterns of political processes and behaviors and their consequences.
- Compare and contrast political institutions and processes across countries to derive generalizations.
- Analyze and interpret basic data relevant to comparative government and politics.

Economics & Finance (Semester)
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.

The student will:

- Develop a greater understanding of the basic concepts of personal finance.
- Interpret and analyze current events and how these events affect financial decisions.
- Gain and understanding of both the macro and microeconomic processes of money, interest rates, credit, the banking system and the increasingly complex world of investments.
- Understand the financial decision-making process of the practical world around them using real time data and information.
- Create, use and manipulate spreadsheet data in order to learn budgeting and portfolio management skills.

History of Art (Full Year)
Art History is intended as a two semester course introducing Western art and the art of other world cultures. First semester begins with the Paleolithic Era and continues through the Italian Gothic Period; second semester begins with the Italian Renaissance and continues through the 21st century. Students may choose to take the semesters independently but are encouraged to take the entire year to gain a deeper appreciation of cross-cultural influences.

The student will:

- Recognize and appreciate major works of art and architecture.
- Identify important political events and how artist responded to these events.
- Trace trends throughout art history and make connections across cultures and time periods.

Psychology (Semester)
Psychology is a one-semester class in which students will study the behavior and mental processes of humans and how they are affected by a person's physical and mental states and environment. Topics include the various personality theories including Freudian theory, the biology of the brain, psychological disorders and treatment, and social and cultural psychology, Psychology is an introductory survey course providing a basic overview of all aspects of psychology rather than going into depth in any particular topic.

The student will:

- Develop an historical understanding of the foundation of modern psychological principles.

- Use psychological principles to understand and explain behavior and social interaction.
- Complete a psychological investigation using the scientific method and present its findings to the class and school.

AP Macroeconomics (Semester) - *based on availability*

This semester-long course is an introduction to foundational concepts in Macroeconomics. Economics on the macro-level examines the aggregate behavior of governments, businesses, and individuals. Students learn how to define and measure productivity, aggregate demand and supply for goods and services, and international trade. The course includes an introduction to the US Financial sector and policies undertaken by governments to stabilize various parts of the economy. Unemployment, inflation, and the foreign currency exchange market are also included.
The student will:

- Apply economic concepts to current events.
- Use graphs, charts, and data to analyze and describe economic concepts.
- Understand economic performance measures, the financial sector, stabilization policies, economic growth, and international economies.

FINE ARTS

Modern Band (Full Year)

Applied Performance (Fall Semester); Music Industry (Spring Semester)
Modern Band integrates culturally relevant music of the moment into a learner-centered music curriculum. The primary instruments of Modern Band are those that contribute to the making of popular music, such as vocals, woodwinds, brass, guitars, keyboards, and percussion. Audio-Video technology tools are considered instruments as well. Digital media is a significant component of instruction.

Advanced beginner music proficiency is required for this class. Students receive group instruction in vocal and instrumental performance and applied music theory and notation. A set number of rehearsals and performances outside of the regularly scheduled class meeting times are required to receive full credit. In Spring Semester, students develop and present individual projects on themes of Music Business, Audio/Video recording, Songwriting, and Music Production. *(Prerequisite: Vocal and Instrumental proficiency interview)*

Theater Arts I -Drama Focus- (Fall Semester)
Students study the history and techniques of theater arts while learning principles of stage movement, voice, and diction. Students develop acting skills for stage and screen performance as they study the works of selected major playwrights. Optional out-of-class performance opportunities are offered. *(Prerequisite: none)*

Theater Arts II - Music Theater and Vocal Focus - (Spring Semester)
Music Theater and Vocal Arts focuses on American Musical Theater and popular music genres. Students develop skills in acting, singing, and stage presence as well as technical theater production. Students prepare and present solo pieces as well as larger ensemble performances. Out of class performances are required. The class will participate in a culminating showcase at the end of the year. *(Prerequisite: none)*

Public Speaking (Semester)
This class is a practical course designed to offer the novice speaker a number of opportunities to organize and prepare public speaking assignments. The course will also offer a "laboratory setting" where the beginning speaker can actually stand in front of a live audience and present his/her practiced performance. Students will design and perform demonstrative, informative, persuasive, and argumentative and debate speeches. In addition to public speaking, further performance opportunities may be included in the area of public oral reading. Students will learn about the role of communication in our lives, the communication model, spatial relationships, delivery styles, and the effectiveness of language, gestures, and organization techniques.

Studio Art I (Semester)

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 through the use of a wide range of tools and processes. Art History is integrated into projects for historical and cultural significance.

Studio Art II/III (Semester)
Art II and Art III build 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 in problem solving. Technical skills are refined as students continue to work in a variety of media.

Yearbook (Full Year)
Frederica's yearbook has a spring delivery. The yearbook program offers opportunities for photography and journalism as well as computer skills in desktop publishing. Students learn how

to produce a professional publication through page layouts, creative text, editing, advertisement sales, and meeting deadlines.

OTHER COURSE OFFERINGS

Advanced Fitness (Semester)
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.

The student will:

- understand and demonstrate kinesthetic awareness.
- gain strength and confidence through safely performing the squat, press, clean, and deadlift.
- translate strength, speed, and agility to sports at Frederica Academy.
- develop a healthy lifestyle through training and nutrition choices.

Health (Semester)
Our Health course combines scientifically accurate information and the application of skills necessary to achieve optimal health and wellness. It contains up-to-date information on developing and assessing every aspect of fitness and includes detailed instruction for peak performance and maintaining a healthy body weight.

Included in our Health Curriculum, a variety of speakers will cover topics on college counseling, study skills, interpersonal skills and strategies on how to navigate an Upper School experience.

The student will:

- develop awareness of the effects of alcohol and drug use.
- engage in mature dialogue on various teenage social issues.
- discuss and understand the driving laws in Georgia for teenagers.
- discuss and understand the different types of driver's licenses as well as how to obtain and keep a license.