

2023-2024 CURRICULUM GUIDE

TEACHING AND LEARNING AT THE FREDERICK GUNN SCHOOL

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DIPLOMA REQUIREMENTS

FOR ALL STUDENTS ENROLLED AT THE FREDERICK GUNN SCHOOL, 18 CREDITS ARE REQUIRED FOR A DIPLOMA.

THE DIPLOMA REQUIREMENTS INCLUDE:

- 4 ENGLISH (required every year)
- **3 HISTORY** (including U.S. History)
- **3 LAB SCIENCE**
- 3 WORLD LANGUAGES (through Level III)
- 3 MATHEMATICS (through Algebra II)
- 1 CREDIT VISUAL AND/OR PERFORMING ART

(This can be accomplished through three single-term courses or one full-year course.)

IN ADDITION, SUCCESSFUL COMPLETION OR ADHERENCE TO:

1TERM OF PATHWAYS (as a freshman)

1 TERM OF CITIZEN GUNN (as a sophomore)

1 TERM OF THE DECLARATION (as a junior)

THE CIVIC CHANGEMAKERS PROJECT (CCP) (30-hour service commitment as a senior)

GOOD CITIZENSHIP (civility and law-abiding behavior)

Seniors must earn a final average of 70 or above and pass all cumulative final exams in diploma requirement courses to meet diploma requirements. Seniors on Academic Warning at year's end do not receive an official diploma. The school reserves the right to withhold a diploma from students with poor citizenship. In such cases, a student receives a Certificate of Attendance and may petition the Head of School in writing for a diploma upon successful, documented completion of one year of college.



DIPLOMA REQUIREMENTS: 4 ENGLISH (required every year)

Each course is labeled with a number (1-4), indicating its level of rigor or challenge (with 4 being the most challenging).

REQUIRED **COURSES**

ENGLISH LANGUAGE AND COMPOSITION

English Language and Composition is an intensive course for new international students needing a thorough preparation in English listening, reading, writing, and conversation for successful academic work in a U.S. college preparatory program. Students review verbs, verbals, and syntax for both formal and informal English to reinfoce an already strong command of English grammar. They also study academic and idiomatic vocabulary. The course is open only to new international students.

ENGLISH I

English I seeks to establish a solid foundation for subsequent study in both literature and composition. Understanding of the role of the hero and the imagination as the impetus for storytelling are two themes followed throughout the year. Through an examination of a range of literature, students are encouraged to consider other perspectives, reflect on their own perspective, and begin to recognize patterns in literature. Class discussions and group work help to facilitate these explorations. Writing assignments are creative, expository, and critical in nature. In addition, instruction in advanced reading skills and the study of rhetoric and grammar give students a sense of the structure and the patterns found in various literary forms, including short stories, novels, poetry, and drama.

ENGLISH II

English II sets forth to explore the enduring power of classic works of literature. In this journey, students read epic poetry, novels, drama, and short fiction, pairing ancient and modern works to understand the history of human thought through its artistic production. Through class discussions and written reflections, students learn to engage with the assigned readings from an increasingly analytical perspective. In addition, students review grammatical concepts in order to improve their own writing skills, study vocabulary in context, and continue to develop as critical thinkers.

ENGLISH II HONORS

Students in this class move into analytic work earlier than those in the regular course and may be asked to examine additional and alternative readings. Admission is based on past performance, teacher recommendations, and approval of the Academic Office and English Department Chair.

LOOKING FOR AMERICA (2)

This course explores an American landscape, literally and imaginatively, and considers how the idea of America shapes and is shaped by the stories we tell about it. Students will read a selection of fiction and non-fiction with a particular focus on the perspectives of immigrants, dreamers, outcasts, and wanderers, keeping in mind the literary and historical contexts in which they are grounded. As in lower level English courses, students will continue to develop their skills as close readers, critical and creative thinkers, and analytical writers.

ADVANCED PLACEMENT ENGLISH LANGUAGE AND COMPOSITION (3)

This yearlong course is for juniors and seniors who are highly motivated, enjoy the academic rigor of an Advanced Placement class, and, most importantly, feel excited about close reading and critical analysis. Students in this class will study a variety of nonfiction texts with a few works of fiction woven into the syllabus, examining each of them through the lens of rhetorical analysis. They will write essays that explore a wide range of approaches, including narrative, argument, rhetorical analysis, and synthesis. While the course will prepare students for the AP exam in the spring, its overarching goal is to provide students with the skills and tools necessary to be careful, considered, and insightful readers, writers, and thinkers. A supplementary reading assignment will be required over the summer for review in the fall. Admission is based on past performance, teacher recommendations, and approval of the Academic Office and English Department Chair.

HONORS ENGLISH/THE SOCIOCRITICAL ESSAY (3)

This yearlong Honors English course, open to juniors and seniors, is designed to explore and practice the Montaigne-style essay with an emphasis on the precepts of Critical Theory. It explores concepts of self and society through a variety of specific topics, including literacy, education, identity, and ethics. Students will be required to engage in class discussion led by their own critical thinking and critical questioning. Through that process, they will learn to examine their own ideas as they work toward developing a more fully formed written voice. In keeping with Montaigne's style, students will situate themselves within their writing in order to critically analyze the individual and society. This course contains a robust writing component that focuses on and encourages the writing process as much as, or more than, the final written product. At the end of the fall and spring terms, students will be expected to develop portfolios showcasing their written work.

HONORS ENGLISH/LITERARY CRITICISM AND CRAFT (3)

This course is an intensive examination of literature from the writer's perspective. Students will assume the roles of writers, learning from other writers, analyzing critically the formal elements of poetry, drama, and literary short fiction to understand how those elements combine to form a fully-realized work of literature. While establishing this theoretical foundation, students will take up the pen and create original works of poetry, drama, and short fiction in their own right. Assignments will include daily reading assignments, critical essays, and opportunities to craft and workshop original works of poetry, drama, and short fiction.

CRITICAL READING AND COMPOSITION (1)

The purpose of this course is to give students the opportunity to take a deep dive into basic approaches to critical reading, discussion, and composition. Over the course of the school year, they will explore a variety of literary forms - including short fiction, the novel, Greek myth, drama, and poetry – with a strong emphasis placed on close reading skills. Writing assignments will include frequent journal responses as well as longer, more formal pieces, and each term will focus on at least one particular type of expository essay. Time and attention will be devoted to each stage of the writing process: from pre-writing through drafting and revision. As well, we will invest significant time in examining grammar and usage topics specifically related to the construction and revision of sentences.

LITERARY GENRES (2)

Literary Genres focuses on the close reading of a variety of forms of literature and the ways in which their structures help to create meaning. The class will examine scripts for stage and screen, novels, short stories, and poetry/music, spanning the 16th through 21st centuries with each term focusing on a particular form. Students will be expected to read and engage with texts through formal and informal discussion, journal writing, and essay writing. They will also give presentations on course-appropriate topics. As in lower-level English courses, students will continue to develop their skills as close readers, critical and creative thinkers, and analytical writers.

ADVANCED PLACEMENT ENGLISH LITERATURE AND COMPOSITION (4)

The AP English Literature course focuses on the careful reading, critical analysis, and enjoyment of imaginative literature. It includes the close reading of selected works of fiction, drama, and poetry from the 16th to the 21st century; the development of critical thinking skills; formal essay and informal journal writing; and AP practice exercises. Because a high score on the AP exam may earn college credit, the course may be considered equivalent to college freshman English. A supplementary reading assignment will be required over the summer for review in the fall. Admission is based on past performance, teacher recommendations, and approval of the Academic Office and English Department Chair.

This is a writing-intensive field course for students who are interested in nature and nature writing. New England is and has been home to some of the most well-respected nature writing and writers, and you can join in that tradition! We will read and write both poetry and nature essays while also spending time outside looking, listening, and touching the natural and built worlds that surround us. Expect to see this world in new ways, and learn how to communicate your new perspective through a variety of written genres, including personal essay, local history, and advocacy papers.

ELECTIVE PUBLICATION COURSES

CIVIC JOURNALISM AND MEDIA MAKING

In this course, students learn and practice the skills of civic journalism over a variety of media platforms. Civic Journalism refers to the integration of journalism and democracy. Students learn how to use news and media outlets to facilitate healthy public engagement, conversation, and debate. They work together to write and publish The Highlander, the school's newspaper, record and produce "The Highlander Podcast," and finally film, edit, and broadcast "The Highlander News Network." This course is open to all students and may be taken for one or more terms for 1/3 art credit per term.



DIPLOMA REQUIREMENTS: 3 WORLD LANGUAGES (through Level III)

REQUIRED COURSES FRENCH LANGUAGE

FRENCHI

This course provides students with an introduction to the four basic skills of language learning: listening, speaking, reading, and writing. Students are introduced to basic French syntax and structures, verb forms, and extensive vocabulary via thematic units. They develop an awareness of Francophone culture through exposure to a variety of authentic sources. Students must earn a passing grade in the course and a minimum score of 50% on the cumulative final exam in order to receive credit and advance to the next level.

FRENCH II AND FRENCH II HONORS

In these courses, students will continue to hone their listening, speaking, reading, and writing skills. Thematic units serve as the vehicle for expanding the students' vocabulary and exposing them to a wider variety of grammar structures. Cultural context will continue to be a key factor in increasing the students' knowledge and understanding of the Francophone world. Students must earn a passing grade in the course and a minimum score of 50% on the cumulative final exam in order to receive credit and advance to the next level. The materials for these courses are from D'accord 2 (Vista), original materials generated by the teacher, and culturally authentic sources that are adapted by the teacher.

FRENCH III AND FRENCH III HONORS

In these courses, students will build upon the skills they have developed over the past two years. They will continue to acquire a wider variety of verb tenses and more advanced grammar structures, expand their range of vocabulary and idiomatic expressions, and further their knowledge and understanding of the Francophone world. Students will also enhance their reading skills by reading longer passages from the text as well as a short reader. Students must earn a passing grade in the course in order to receive credit and fulfill their graduation requirement.

ELECTIVE COURSES FRENCH LANGUAGE

FRENCH IV: UNDERSTANDING OF **CONTEMPORARY FRENCH CULTURE**

"Liberté, égalité, fraternité" define the French spirit and the core values and fundamental principles of French society. These three words also apply to French culture, free, diverse, but always unified. This course will provide students with an introduction to French contemporary culture through the study of modern French literature, fine arts, architecture, cinema, music, sport, fashion, and gastronomy. Students will practice in listening, reading, and writing short paragraphs, and review basic grammar concepts. The main focus of this course will be on the development of speaking skills through group and individual projects. Admission is based on past performance, teacher recommendation, and approval of the Department Chair.

ADVANCED PLACEMENT FRENCH LANGUAGE:

This course is conducted entirely in French and prepares students to take the AP French Language and Culture Exam in the Spring Term. Students develop proficiency in listening, speaking, reading, and writing through a study of six cultural themes: les défis mondiaux, la science et la technologie, la vie contemporaine, la quête de soi, la famille et la communauté, et l'esthétique. Video clips, songs, online sources, and newspapers supplement the required texts and are used weekly to explore the Francophone world. Expectations of student participation are high. The Advanced Placement exam is required of all students. Admission is based on past performance in French IV, teacher recommendation and approval of the Department Chair.

REQUIRED COURSES MANDARIN LANGUAGE

MANDARIN I

This course in Mandarin (Putōnghuà) is designed for students with minimal to no prior exposure to the Chinese language. The emphasis of this course is to develop listening, speaking, reading, and writing skills using simplified Chinese characters. These will be taught using course materials including the *Integrated Chinese 4th* Edition Level 1 Textbook, which students will progress halfway through by the end of the year, learning approximately 150 words and 175 characters. Students will develop the ability to make introductions, discuss family, schedule appointments, and share hobbies, likes, and dislikes. Cultural lessons will also complement language instruction to help students gain a broader understanding of the Chinese-speaking world. Students have the option to certify their interpersonal language abilities by taking the AAPPL exam in the spring. A passing grade in the course and a minimum score of 50% on the cumulative final exam is required to receive credit and advance to the next level.

MANDARIN II

This course in Mandarin (Putonghua) is designed for students who have had one full year of study or equivalent in Chinese. Students will study more complex grammar and specialized vocabulary to further develop their listening, speaking, reading, and writing skills. Greater emphasis is placed on speaking and writing at length, with the goal of practicing paragraph-length discourse. Course materials include the Integrated Chinese 4th Edition Level 1 Textbook, which students study the second half of over the academic year, learning over 200 new words and characters. Cultural lessons will also complement language instruction to help students gain a broader understanding of the Chinese-speaking world. Students have the option to certify their interpersonal language abilities by taking the AAPPL exam in the spring. A passing grade in the course and a minimum score of 50% on the cumulative final exam is required to receive credit and advance to the next level.

MANDARIN III

This course in Mandarin (Putōnghuà) is designed for students who have had two full years of study or equivalent in Chinese. Students will continue to study more complex grammar and specialized vocabulary to further develop their listening, speaking, reading, and writing skills. Still greater emphasis is placed on listening to and reading longer-form materials, as well as speaking and writing at length, with the goal of achieving comfort producing and engaging with paragraph-length discourse. Course materials include the Integrated Chinese 4th Edition Level 2 Textbook as well as supplementary, authentic reading and listening materials. Students will learn hundreds of new words and characters, and be expected to communicate almost entirely in Mandarin in the classroom. Cultural lessons will also complement language instruction to help students gain a broader understanding of the Chinese-speaking world. Students have the option to certify their interpersonal language abilities by taking the AAPPL exam in the spring. A passing grade in the course and a minimum score of 50% on the cumulative final exam is required to receive credit and fulfill graduation requirements.

ELECTIVE COURSE - MANDARIN LANGUAGE

MANDARIN IV

This elective course in Mandarin (Putōnghua) is for students who have had three full years of study or equivalent, or greater, in Chinese. Students will attend class in an immersive language environment in order to best improve their listening, speaking, reading, and writing skills. This course has no designated textbook, but will instead pull authentic language materials from a variety of sources to expose students to a more diverse spectrum of the Chinese language. Students will continue to study more complex grammar structures and specialized vocabulary, including idioms, and will routinely be expected to produce longer-form compositions and spoken presentations to improve their ease of expression in both speaking and writing. Cultural lessons and discussions will also complement language instruction to help students gain a greater understanding of the Chinese-speaking world. Students are encouraged to certify their interpersonal language abilities by taking the AAPPL exam in the spring. Admission to the course is based on past performance, teacher recommendation, and approval of the Department Chair.

REQUIRED COURSES SPANISH LANGUAGE

SPANISH I

This course provides students with a foundation in the four essential skills of language learning: listening, speaking, reading, and writing. Thematic units serve as the vehicle for introducing students to basic Spanish syntax and structures, verb forms, and extensive vocabulary. Students also develop an awareness of Hispanic culture through exposure to a variety of authentic sources. Students must earn a passing grade in the course and a minimum score of 50% on the cumulative final exam in order to receive credit and advance to the next level. The materials for this course are from *Descubre Uno* and original, culturally authentic materials generated by the teacher.

SPANISH II AND SPANISH II HONORS

In these courses, students will continue to hone their listening, speaking, reading, and writing skills. Thematic units serve as the vehicle for expanding the students' vocabulary and exposing them to a wider variety of grammar structures. Cultural context will continue to be a key factor in increasing the students' knowledge and understanding of the Hispanic world. Students must earn a passing grade in the course and a minimum score of 50% on the cumulative final exam in order to receive credit and advance to the next level. The materials for these courses are original materials generated by the teacher and culturally authentic sources that are adapted by the teacher.

SPANISH III AND SPANISH III HONORS

In these courses, students will build upon the skills they have developed over the past two years. They will continue to acquire a wider variety of verb tenses and more advanced grammar structures, expand their range of vocabulary and idiomatic expressions, and further their knowledge and understanding of the Hispanic world. Students will also enhance their reading comprehension skills by reading short stories from different Spanish and Latin American authors, as well as read news articles about current events happening in the Spanish-speaking world. This course is taught primarily in Spanish. Students must earn a passing grade in the course in order to receive credit and fulfill their graduation requirement. The materials for these courses are original materials generated by the teacher and culturally authentic sources that are adapted by the teacher.

ELECTIVE COURSES -SPANISH LANGUAGE

SPANISH IV POPULAR CULTURE IN LATIN AMERICA

This course will embark on historical moments vital to understanding the shaping of Latin America today. It will explore social and cultural identities crucial to understanding Latin American cultures. Taught primarily in Spanish, it will seek to refine and expand the basic skills of listening, reading, writing, and speaking. Students will research, read and discuss various works, including music, poems, online resources, excerpts from interviews, short stories, and novels grouped into thematic units. In addition, students will screen and discuss films relevant to the themes. The course will provide students with a review and expansion of essential grammar concepts, intending to develop the student's ease of expression in conversation and writing.

ADVANCED PLACEMENT SPANISH LANGUAGE

This course is conducted entirely in Spanish and prepares students to take the AP Spanish Language and Culture Exam in the Spring Term. Students develop proficiency in listening, speaking. reading, writing, and culture through the study of six themes: Global Challenges, Science and Technology, Contemporary Life, Personal and Public Identities, Families and Communities, and Beauty and Aesthetics. Video clips, songs, online sources, and newspapers supplement the required texts and are used to explore the Hispanic world. Expectations for student participation are high, and the Advanced Placement exam is required of all students. Admission is based on past performance in Spanish IV, teacher recommendation and approval of the Department Chair.

WORLD LANGUAGE DEPARTMENT ELECTIVE COURSE

WORLD LANGUAGE CULTURES

In this course, students will be exposed to broad awareness of various cultural aspects of French, Mandarin, and Spanish. Students will uncover general history, geography of which countries speak the language, read a classic novel and other literature, watch related themed movies and video clips, learn about and celebrate common holidays, develop knowledge of basic grammar and vocabulary, and view and study various forms of Art. Students who have taken a language before would be responsible for leadership during their language's basics. This course focuses on developing and enhancing the students' awareness of culture from the languages that are taught within the World Language Department. Prerequisites: Teacher recommendation and approval of the Department Head. Text: The House on Mango Street (Sandra Cisneros), Colors of the Mountain (Da chen), Waiting for Godot (Samuel Beckett)

NOTE: THE DEPARTMENT RESERVES THE RIGHT TO OFFER ONLY THOSE ELECTIVE OR ACCELERATED COURSES THAT MEET MINIMUM ENROLLMENT REQUIREMENTS.

INDEPENDENT STUDY PROJECT

The Frederick Gunn School supports the study of languages not offered by our faculty through our Independent Study Project (ISP) option. Students who have a foundation of study or speaking in a non-offered language can be supported through an online learning platform and supervised by the World Language Chair. Please follow the ISP process. In this case, an exemption can be made to the prerequisite of being a returning student.



DIPLOMA REQUIREMENTS:

3 MATHEMATICS (through Algebra II)

REQUIRED COURSES

MATHEMATICS 10 ALGEBRA I

This is an introductory course in algebra. Topics include the field axioms, operations on real numbers, solving linear equations and systems of linear equations, graphing linear equations and inequalities, exponents, radicals, polynomials and factoring, and quadratic functions. There is a heavy emphasis on problem-solving strategies. A TI-84 Plus graphing calculator is required. Students must pass both the course and the cumulative final exam in order to receive credit in this diplomarequirement course.

MATHEMATICS 20 GEOMETRY

This course emphasizes problem solving in real-life situations using geometric concepts. Formal proof is introduced but greater attention is devoted to practical applications, such as perpendicular lines and area, as well as the language of geometry. A TI-84 Plus graphing calculator is required. Students must pass both the course and the cumulative final exam held at the end of the winter term in order to receive credit in this diploma-requirement course. Students will study algebra during the Spring Term.

MATHEMATICS 21 GEOMETRY

This course stresses the language of geometry, the development of proof, and the appropriate applications from algebra. The use of definitions, postulates, and theorems to justify conclusions will be emphasized. A TI-84 Plus graphing calculator is required. Admission is based on past performance, teacher recommendation and department head approval. Students must pass both the course and the cumulative final exam in order to receive credit in this diploma-requirement course.

MATHEMATICS 29 TOPICS IN ALGEBRA II

This is a second course in algebra. Topics include an in-depth look at linear, quadratic and rational functions. Other topics may include: statistics, probability, and trigonometry. Students will be asked to analyze problems analytically, numerically and graphically. A TI-84 Plus graphing calculator is required. Students will be placed in this course based on placement test results, current teacher recommendation, and department head approval. Students must pass both the course and the cumulative final exam in order to receive credit in this diploma-requirement course.

MATHEMATICS 30 ALGEBRA II

This is a second course in algebra. Topics include the natural numbers and integers, rational numbers, linear equations, polynomials and factoring, coordinate geometry, complex numbers, relations and functions, exponents and logarithms, quadratic relations, and word problems. A Tl-84 Plus graphing calculator is required. Students must pass both the course and the cumulative final exam in order to receive credit in this diploma-requirement course.

MATHEMATICS 32 ALGEBRA II HONORS AND TRIGONOMETRY

This is a more demanding and enriched Algebra II curriculum with additional topics that include transformations of functions, exponential and logarithmic functions, trigonometry, the law of sines and cosines, complex numbers, sigma notation, sequences and series, and limits. This class brings together talented students who enjoy math and whose scholarship indicates a strong sense of responsibility. Admission is based upon past performance, teacher recommendation, and department head approval. A TI-84 Plus graphing calculator is required. Students must pass both the course and the cumulative final exam in order to receive credit in this diploma-requirement course.

ELECTIVE COURSES

MATHEMATICS 40 TOPICS IN MATHEMATICS

This course is open to any student who has completed Algebra II. Throughout the year, students will tackle various concepts related to financial literacy. Some of the main topics include financial responsibility, credit and privacy concerns, exploring insurance, taxes, saving for retirement and investing. Various projects will be given so that students can explore these topics relevant to their own experiences and interests. This course allows students to see practical applications of mathematics in their future.

MATHEMATICS 41 STATISTICS

This course is for students who have completed Algebra II. Students study statistical methods and how to use the TI-84 Plus calculator and computer programs to carry out calculations and simulations. Students collect and analyze data and learn how to report results. This course places a strong emphasis on using effective procedures and on application of results. This course is taught by activities that lead the students to discover statistical concepts such as sampling, bias, experimentation, and confounding. Students also examine how statistics are used today to affect public opinion so they can become thoughtful and critical consumers of the statistics used in everyday life.

MATHEMATICS 45 PRECALCULUS

This course is intended for students who have completed Algebra II. Topics include analysis of polynomial functions, exponential and logarithmic functions, trigonometric functions, circular functions, sequences and series, complex numbers, translating graphs, and applications. Heavy emphasis is placed on trigonometry. Admission is based on past performance, teacher recommendation, and department head approval. A TI-84 Plus graphing calculator is required.

MATHEMATICS 50 TRIGONOMETRY/CALCULUS A

This course is open to students who have completed Algebra II and who have received a recommendation from their previous teacher and the department head. During the Fall Term, students will do a review of functions in preparation for dealing with trigonometric functions as the main topic of study. Topics will include the unit circle, solving trigonometric equations, producing trigonometric graphs, the law of sines and cosines, and trig proofs. During the Winter Term, students will dive into parametric and polar functions, series and vectors. During the Spring Term, students will begin their study of calculus, using the AP Curriculum AB, and will look to complete as much of the AP curriculum surrounding limits and derivatives as possible. If time allows, students will get an introduction to integrals.

MATHEMATICS 51 CALCULUS AND ANALYTIC GEOMETRY

This course is intended for students who have completed Precalculus and have a knowledge of college preparatory mathematics, including algebra, axiomatic geometry, trigonometry, and analytic geometry. It does not assume that they have acquired a sound understanding of the theory of elementary functions; the development of this understanding is the first priority of the course. Differentiation and integration techniques and applications will be studied. Admission is based on past performance, teacher recommendation, and department head approval. A TI-84 Plus graphing calculator is required.

MATHEMATICS 52 ADVANCED PLACEMENT CALCULUS AB

This course follows the AP syllabus for Calculus AB. The course is intended for students who have completed Precalculus or Algebra II Honors and Trigonometry and have a thorough knowledge of college preparatory mathematics, including algebra, axiomatic geometry, trigonometry, and analytic geometry. Heavy emphasis is placed on the development of differential and integral calculus. Admission is based on past performance, teacher recommendation, and department head approval. The Advanced Placement exam is required of all students enrolled in this course. A TI-84 Plus graphing calculator is required.

MATHEMATICS 53 ADVANCED PLACEMENT CALCULUS BC

This course follows the AP syllabus for Calculus BC and is for students who have completed AB Calculus. After the introduction to differential and integral calculus, topics discussed include analytic geometry, polar coordinates, differential equations, parametric equations, and infinite series. Admission is based on past performance, teacher recommendation, and department head approval. A TI-84 Plus graphing calculator is required. The Advanced Placement examination is required of all students enrolled in this course.

MATHEMATICS 54 ADVANCED PLACEMENT STATISTICS

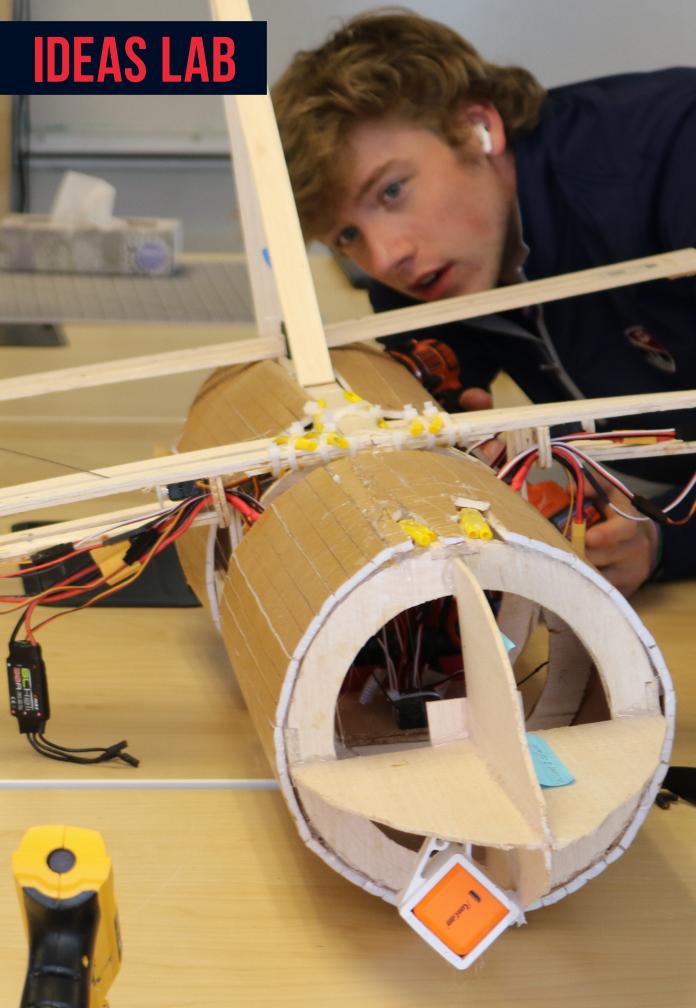
This course is for students who have completed Precalculus. Topics include: exploring data using various graphical and numerical methods, data collection and analysis, probability, statistical inference, using appropriate models, and tests of significance. Admission is based on past performance, teacher recommendation, and department head approval. A TI-84 Plus graphing calculator is required. This course will follow and complete the Advanced Placement curriculum. The Advanced Placement exam is required of all students enrolled in this course.

ADVANCED COMPUTER SCIENCE

Advanced Computer Science is a course designed to provide students with a comprehensive understanding of computer science concepts and their applications. The course covers topics such as algorithms, data structures, programming, and problem-solving. Utilizing the Java programming language, students will apply their knowledge to create original programs. Emphasis is placed on the development of critical thinking skills, creativity, and the ability to design and analyze algorithms. Students will be expected to participate in group projects, problem-solving activities, and individual programming assignments. Although not a requirement, this course is designed to prepare students for the AP Computer Science exam, as well as for further study in computer science or related fields.

INDEPENDENT STUDY IN ADVANCED MATHEMATICS

The Frederick Gunn School supports the study of advanced topics in mathematics through our Independent Study Project (ISP) option. Depending on student interest this may take the form of a none traditional course. Please follow the ISP process. See the Independent Study Project section at the end of this Guide.



ONE-TERM COURSES

INTRODUCTION TO ENGINEERING

This course is designed to provide students with an introduction to the engineering design process, and provide hands-on experience using Onshape, a cloud-based computer-aided design (CAD) software. The main focus of the course will be on a trimester-long project, where students will work in teams to design and build a remote-controlled hovercraft. Throughout this project, students will learn the principles of engineering design, including conceptualization, prototyping, testing, and iteration. By the end of the course, students will have a deep understanding of the engineering design process and the skills to use computer aided design software to begin designing and building their own projects. No prior experience necessary.

FULL-YEAR COURSES

ENGINEERING I

In this full-year engineering course, students will dive deeper into the engineering design process as they work through a number of individual and group projects utilizing technologies such as Onshape, Arduino, Raspberry Pi, and Python coding. Building on prior knowledge, students will experiment with more advanced CAD techniques to create, edit, analyze 3D models, and prepare their designs for fabrication. Additionally, students will work through projects that utilize both an Arduino microcontroller and a Raspberry Pi, a small low-cost computer, to build projects that interact with the physical world. They will learn how to control these devices using Python, a widely used programming language, and use it to read sensor data, control devices and communicate with other systems. Throughout the course, students will work to integrate the skills and technologies learned in class, culminating in a final project where students will apply their skills and knowledge to design, build, and program their own project. Prerequisite: Introduction to Engineering or similar.

ADVANCED ENGINEERING

Advanced Engineering is a challenging course that combines hands-on engineering projects with entrepreneurship skills. The course focuses on the design, development, and commercialization of innovative engineering solutions. Students will work in teams to complete a capstone project that integrates engineering principles with business strategies. The project will require students to identify an engineering problem, conduct market research, and create a product that addresses the problem. This course is designed for students with a strong background in engineering who are interested in applying their skills in a real-world setting. Students will develop a deep understanding of how to create and launch a successful engineering-based startup, and will gain valuable experience in product development, market analysis, and business planning. The course is an excellent opportunity for students who are interested in entrepreneurship, innovation, and the commercialization of technology. Prerequisite: Engineering 1 or similar.

INTRODUCTION TO ROBOTICS

This full-year course will use the Vex Robotics platform as a way for students to learn the fundamental concepts of robotics and programming. Students will work in teams to design, build, and program robots using Vex Robotics kits and software. Through hands-on projects and challenges, students will learn about mechanical design, electronics, sensor integration, and programming concepts such as control structures, loops, and functions. Additionally, this course will cover the use of VEXcode, a text-based programming language that allows students to write programs to control their robots. A strong emphasis will be placed on problem-solving, critical thinking, and collaboration, as students work together to design and program their robots to complete various challenges and competitions. By the end of the course, students will have gained a solid foundation in robotics and programming, and will be able to apply what they have learned to design and build robots for various applications. No prior experience necessary.



DIPLOMA REQUIREMENTS: 3 LAB SCIENCE

LABORATORY COURSES

EARTH AND PHYSICAL SCIENCE

This course provides students with an introduction to experiential learning in the areas of physics and chemistry. Students will explore how science relates to their lives and will acquire some of the skills required to continue their study of science. They will learn to work with formulas, take measurements, follow and generate laboratory procedures, collect and analyze data, read articles about science, debate scientific ideas, study scientists and inventors, and prepare presentations. Major topics include: Newton's laws, work, energy, and electricity (physics), and the atom, gas laws, chemical reactions, and bonding (chemistry). Students will develop skills in observation, analysis, and reasoning in addition to pertinent content that will support future scientific studies and promote a deeper awareness of the world around them.

BIOLOGY

This course introduces basic concepts in biological science, including cell structure and functions, cell physiology, and cellular reproduction. Also covered are basic living systems (digestion, circulation, reproduction, etc.), genetics, evolution, and ecology. Weekly laboratory exercises are an integral part of the course. Prerequisite: Permission of Department Chair.

BIOLOGY HONORS

This course introduces basic concepts in biological science, including evolution, plant biology, animal biology, cellular physiology and organization, and forest and stream ecology. There will be regular labs in and outside of the classroom that are integral to the course. There will be regular discussions and presentations on topics related to our course material. Prerequisites: Earth and Physical Science and recommendation of the department.

ADVANCED PLACEMENT BIOLOGY

This course follows the Advanced Placement curriculum and is a rigorous, full-year, college-level biology course. The curriculum focuses on the four "Big Ideas" of biology: Evolution, Energy and Molecular Building Blocks, Information Storage and Retrieval, and System Interactions.

Sub-topics include genetics, ecology, cell structure and function, and biological diversity. Twenty-five percent of class time is dedicated to inquiry-based lab activities. The Advanced Placement Biology examination is required of all students enrolled in this course. Prerequisites: Chemistry (85% or higher) and recommendation of the Science Department. Any waiver of a prerequisite must be approved by the Science Department Chair.

HUMAN ANATOMY AND PHYSIOLOGY

This course provides the student with an understanding and appreciation of the major body systems, their structures and their functions. Clinical consideration and its impact are covered. This course is intended for students who are interested in careers in health-related fields or who simply possess a curiosity to learn more about the human body. Labs and class activities are used for reinforcement of core concepts. Prerequisite: Biology.

ENVIRONMENTAL STUDIES

This course will consider the environment from the perspective of local ecology. It will be a laboratory-based course focused on learning the principles of ecology (the study of the interaction between organisms and their environment) and applying them to our local area. In this course, we will cover topics such as animal behavior, taxonomy, population biology, life histories, landscape ecology, and more. We will use the scientific method to understand and discover information about the space we live in. This course shows us that the fascinating phenomena of nature do not only happen in documentaries in far away places — they happen in our own backyard!

ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE

This full-year laboratory course in environmental science will provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world; to identify and analyze environmental problems, both natural and human-made; to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them. Environmental science is interdisciplinary; it embraces a wide variety of topics from different areas of study. Yet there are several major unifying constructs, or themes, that cut across the many topics included in the study of environmental science. These topics include energy conversions underlying all ecological processes; the earth as one interconnected system (biogeochemical systems); human impact on the environment, including technology and population impacts; the role of cultural, social, and economic factors in developing solutions: achieving sustainable systems and management of common resources. Prerequisites: Two years of lab science including Biology and/or Chemistry, Algebra II (completed or concurrent) and recommendation of the Science Department. Any waiver of a prerequisite must be approved by the Science Department Chair.

PRE-MED

The objective of this one-year course is to expose highly motivated high school students, who are interested in pursuing a career in medicine, to an introduction to clinical methods with hands-on experience in medical techniques (such as taking vitals) and a brief exploration of topics such as anatomy, histology, embryology, physiology, cardiology, neuroscience, pathology, immunity, and endocrinology, among others. Prerequisite: English II or higher and at least one of the following: Chemistry, Biology, Physics, Human Anatomy and Physiology, or Environmental Studies. This course has a lab/practical component and thus qualifies as a lab science.

CHEMISTRY

The objective of this first-level chemistry course is to provide students with an understanding of basic organic and inorganic chemistry. Through lectures, problem solving, and experimentation, students will learn the fundamentals involved in changes to matter and energy. Topics include: measurement and calculation techniques, what is matter, the elements, atoms and ions and how they interact, nomenclature, chemical composition and reactions, solutions, states of matter, bonding, acids-base behavior, and how these relate to energy. Students will read articles about applied chemistry and prepare a research paper on a contemporary topic in chemistry. Experiments are used to familiarize students with the scientific method, good lab practices, and to relate theory to practice.

CHEMISTRY HONORS

The objective of this first-level honors chemistry course is to provide students with an understanding of basic organic and inorganic chemistry. Through lectures, problem solving, and experimentation. students will learn about the changes that occur in matter and energy. Topics include: measurement and calculation techniques, what is matter, the elements, atoms and ions and how they interact, nomenclature, chemical composition, reactions, and quantities, solutions, states of matter, bonding, acids-base behavior, thermo- and electrochemistry, and how these relate to energy. Students will read articles about applied chemistry and prepare a research paper on a contemporary topic in chemistry. Experiments are used to familiarize students with the scientific method, good lab practices, and to relate theory to practice. Students will work towards proficiency in all aspects of quantitative analysis along with enhanced problem-solving skills. Students should be enrolled in Algebra II or a higher math course.

ADVANCED PLACEMENT CHEMISTRY

Advanced Placement Chemistry is a rigorous, full-year, college-level course. Students in this course will attain a depth of understanding of fundamentals and a reasonable competence in dealing with chemical problems. Topics include: chemical bonding, molecular models (geometry), atomic structure and theory, states of matter (gas, liquid and solid), chemical reaction types, solutions and equations, equilibrium, chemical kinetic theory, and stoichiometry. The topics covered emphasize chemical calculations and mathematical formulation of basic chemical principles. The increased quantitative emphasis beyond that conducted within the basic chemistry class appears both in each of the topics and in the time spent by students in laboratory analysis and calculations. Prerequisites: Chemistry Honors (with average grades of 85% or higher), completed Algebra II and recommendation by the Science Department. Any waiver of a prerequisite must be approved by the Science Department Chair.

PHYSICS

This course surveys major topics in physics: laws of motion, universal gravitation, heat transfer and thermodynamics, electricity and magnetism, vibrations and waves, sound, light, color, optics, and atomic and nuclear physics. While the course emphasis is on conceptual knowledge of physics, there is a high level of routine manipulation of algebraic equations and weekly analysis of laboratory data. An online instructional tool will be utilized throughout the course. Prerequisites: Algebra II (completed or concurrent), one year of a lab science completed, and Science Department recommendation.

ADVANCED PLACEMENT PHYSICS 1

This full-year laboratory course is equivalent to a first-semester college course in algebra-based physics. The course covers Newtonian mechanics (including rotational dynamics and angular momentum); work, energy, and power; and mechanical waves and sound. It will also introduce basic electric circuits. Students should be enrolled in Algebra II or a higher-level math class (with average grades of 85% or higher), and be recommended by the Science Department. No prior physics course is required for this class. Waivers to prerequisites must be approved by the Science Department Chair. The Advanced Placement Physics 1 final examination is required of all students enrolled in this course. An online instructional tool will be utilized throughout the course.

ADVANCED PLACEMENT PHYSICS 2

This full-year laboratory course is equivalent to a second-semester college course in algebra-based physics. This course covers fluid mechanics: thermodynamics; electricity and magnetism; optics; and atomic and nuclear physics. Students should have completed Algebra II and be enrolled in precalculus or a higher-level math class (with average grades of 85% or higher); completed AP Physics 1 or an equivalent (with average grades of 85% or higher), and be recommended by the Science Department. Waivers to prerequisites must be approved by the Science Department Chair. The Advanced Placement Physics 2 final examination is required of all students enrolled in this course. An online instructional tool will be utilized throughout the course.

ADVANCED PLACEMENT PHYSICS C (MECHANICS AND ELECTRICITY/MAGNETISM)

This full-year lab course is divided into two major parts. In Mechanics, instruction and labs cover six content areas: kinematics; Newton's laws of motion; work, energy, and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. In Electricity and Magnetism, the instruction and labs cover five content areas: electrostatics; conductors; capacitors and dielectrics; electric circuits; and magnetic fields and electromagnetism. Although fewer topics are covered in AP Physics C than in AP Physics 1 or 2, they are covered in greater depth and with greater analytical and mathematical sophistication, including calculus applications. Calculus applications such as differentiation, integration, and separation of variables technique for solving differential equations will be extensively utilized. Additionally, vector mathematics will be used extensively in the course. Students should have completed one year of physics and have completed or be concurrently taking BC Calculus and be recommended by the Science Department. Waivers to prerequisites must have prior approval by the Science Department Chair. Students are required to take both the AP Physics C Mechanics and AP C Electricity and Magnetism exams in the spring.

SCIENCE ELECTIVES (NON-LAB COURSES)

BIOLOGY OF THE BRAIN

This course introduces students to the anatomy and physiology of the brain, its remarkable curiosities and complexities, and the neural basis of thought. Additional topics include an overview of the visual system, the limbic (emotional/hormonal) system, and the deleterious work of the many abused substances. The course concludes with student presentations on a topic of their choice. (fall)

HUMAN HEALTH

This course deals with many different aspects of health, nutrition, and wellness. Topics include cardiovascular disease, cancer, addiction, and AIDS. The course encourages a seminar format supplemented by open discussion of issues that affect high school and college students. (winter)

ABNORMAL PSYCHOLOGY

This is an introductory course to clinical psychology and human psychopathology. This course introduces students to vocabulary and fundamental diagnostic procedures of people with cognitive, mental, and emotional disorders. The major classes of mental disorders are reviewed as guided and diagnosed by the DSM-5. The course material is interdisciplinary; it examines biological, medical, psychological, social, cultural, and political aspects of mental illness. Students are taught ways to formulate and analyze psychopathology, with the purpose of helping them develop an introductory but integrated understanding of mental disorder and intervention. Focus will be on diagnosis, epidemiology, course of the disorder, etiology, and treatment issues. We will also briefly examine ethical and legal issues pertaining to psychopathology. A major goal of the course is to promote greater awareness and knowledge of psychopathology in hopes that we can reduce the suffering and stigma associated with mental disorders. (one term)



DIPLOMA REQUIREMENTS 3 HISTORY (including U.S. History)

UNDERCLASSMEN REQUIRED COURSES

WORLD HISTORY, MODERN GLOBAL HISTORY, AND U.S. HISTORY (TAKEN JUNIOR YEAR) ARE REQUIRED FOR **GRADUATION. STUDENTS MUST EARN** THREE HISTORY CREDITS TO MEET THE **GRADUATION REQUIREMENT.**

WORLD HISTORY

Freshman history is a big picture, thematic and systematic examination of the past, from the early humans to modernity. As a class, we will seek out common themes and patterns that can help us better understand people, civilizations, and the world we live in. Our focus will include our human connection to all that is around us, both environmental and cultural, and as such the class will draw on many disciplines to inform our historical analysis. Students will encounter challenging ideas and difficult questions, and through these they will learn to make multidisciplinary connections. In engaging new ideas and information from a variety of sources, students will learn how to hypothesize, ask useful questions, seek out appropriate resources, analyze documents and content, make and support specific points, and write a clear and cogent argument.

MODERN WORLD HISTORY

Sophomore history builds on the topics studied in World History by exploring important themes, historical turning points, and assessing their impact on the modern world. Students will explore the Renaissance, the Age of Exploration, the Enlightenment, the Industrial Revolution, the World Wars, and the Cold War. The course will also cover the rise of nationalism, imperialism, and decolonization as well as globalization. Students will analyze the complex and ongoing conflicts in the world with particular focus on selected tensions in the Middle East, Asia, and Africa. Emphasis is given to the continued instruction and the practice of essential skills such as research, evaluating the credibility of sources, analyzing primary sources, developing historical arguments, and respectful debate and discussion.

MODERN WORLD HISTORY HONORS

Sophomore history builds on the topics studied in World History by exploring important themes, historical turning points, and assessing their impact on the modern world. Students will explore the Renaissance, the Age of Exploration, the Enlightenment, the Industrial Revolution, the World Wars, and the Cold War. The course will also cover the rise of nationalism, imperialism, and decolonization as well as globalization. Students will analyze the complex and ongoing conflicts in the world with particular focus on selected tensions in the Middle East, Asia, and Africa, Emphasis is given to the continued instruction and the practice of essential skills such as research, evaluating the credibility of sources, analyzing primary sources, developing historical arguments, and respectful debate and discussion. This particular course differs slightly from Modern World History in both its pacing and in its conceptual rigor. Expectations in various themes and skills will be significantly increased from the Modern World History level. Students must be recommended for this course.

UNITED STATES HISTORY

This course covers specific themes in U.S. History. In the Fall Term, the course focuses on the American Revolution, looking at its causes and impact, and explores the Constitution and the Bill of Rights, historically, and in the contemporary context. The Winter Term covers the antebellum era, the Civil War, Reconstruction, and explores how this divisive time in American history affected our national and social identity. In the Spring Term, the 1960s as a defining moment in American history is the focus. Topics include the Cold War, the Civil Rights movement, and the Vietnam War. The interdisciplinary Junior Research Paper and formal (and informal) debates provide students with opportunities to sharpen research, writing, and communication skills. Other projects call upon students to work in groups and to become more creative historians. In addition, students will develop active reading and analytical skills to aid in constructing incisive research questions about United States history.

ADVANCED PLACEMENT UNITED STATES HISTORY

The goal of this course is to provide preparation for the successful completion of the AP examination in American History. Selected documents pertaining to key economic, political, and social developments are discussed and analyzed. The Junior Research Paper, independent research projects, class discussion, and the use of primary material are included. The AP examination is administered to all students enrolled in this course. Students must be approved by the Academic Office, in consultation with the department and using criteria that take into account grades, comments, and intellectual maturity.

UPPERCLASSMEN ELECTIVE COURSES — FULL YEAR

THE FOLLOWING ELECTIVE COURSES ARE OPEN TO JUNIORS AND SENIORS UNLESS OTHERWISE NOTED IN THE COURSE DESCRIPTION. THE DEPARTMENT RESERVES THE RIGHT TO OFFER ONLY THOSE COURSES THAT MEET MINIMUM ENROLLMENT REQUIREMENTS.

ECONOMICS

This course in economic theory uses current events and historical context to train the student to think like an economist, develop investment strategies, and assess government policy. The foundations for the course are the core concepts of economics. The general overview frames the analysis of markets, incentives, government and the economy, and interest groups. Then comes a study of financial markets, international economics, economic development, and economic crisis and recovery. Finally, students learn about basic terms and vehicles used in the investment world, then study the more advanced concepts. Students maintain their own portfolios, watching markets closely, and experience firsthand the role of diversity in investing and how one's age, risk tolerance, and financial situation shape the dynamics of investing. Throughout the course, a focus on applying economic concepts from both the macro and micro perspectives allows students to analyze individuals and the impact of government on people's lives. Ultimately, students are challenged to form arguments and justify conclusions by using economic concepts to make choices and decisions in important issue areas.

ADVANCED PLACEMENT ECONOMICS

In Microeconomics, we explore individual decision makers within the economic system, focusing on the actions of consumers and producers and how the government can sometimes promote efficient and equitable outcomes between the two groups. We will attempt to answer the questions: How do people make decisions? And how do people interact as individual households and firms and in market structures? In Macroeconomics, we study how the principles of economics apply to the economic system as a whole, including topics such as inflation, unemployment, and economic growth. We will attempt to answer the question: How does the economy as a whole work in both the short run and the long run? All students are required to take the AP Microeconomics and AP Macroeconomics exams in May. Students must be approved by the Academic Office, in consultation with the department and using criteria that take into account grades, comments, and intellectual maturity. Summer work is required.

HONORS ENTREPRENEURSHIP SEMINAR

Entrepreneurship is much more than simply starting a business. It requires innovation and risk, teamwork and organizational skills. Entrepreneurship is impactful, political, and passionate. Entrepreneurship is one of the most effective ways to address social, environmental, and economic issues in our modern economy. In the Fall Term, we will start the class by learning the foundations of entrepreneurship. This will include finances, investing, marketing, legal matters, and professional development. The majority of the work will be student-driven; students will partake in hands-on projects that teach the importance of raising capital and engaging with the community. In the winter, we will transition to the study of corporate social responsibility and how to develop a business that is a force for good. We will explore different industries in order to identify ideas that equally balance profits with social impact and sustainability. Finally, students will have the entire Spring Term to create their own business plan and pitch it to a panel of investors comprised of Gunn alumni and faculty. This class will regularly feature speakers, giving students the opportunity to learn from experienced entrepreneurs. As this is an honors-level seminar, the focus will be on project work, class discussions, and written assignments. Students who sign up for this class must be ready to be proactive, try new things, and learn from their failures. No other knowledge is required!

AMERICAN GOVERNMENT

This course provides students with a setting to critically examine and evaluate the multiple expressions of citizenship in the United States of America. The course includes both the study of general concepts used to interpret U.S. government and politics, and the analysis of specific examples. Students will learn the various institutions, groups. beliefs, and ideas that constitute U.S. government and politics. The course content will enable students to internalize and demonstrate the values of social responsibility, responsible citizenship, and a commitment to the advancement of the common good, justice, freedom, human rights, and the rule of law.

HONORS PHILOSOPHY SEMINAR

This course introduces key philosophical, moral, economic, and political concepts from the Ancient Greeks to the 21st century. The class follows a seminar format, where students will be expected to undertake weekly reading of primary sources and engage in informed classroom discussion. Assessment will be based on participation, weekly short writing assignments, and term research papers.

HUMANITIES: RACE IN AMERICA

This yearlong class is designed to explore conceptions of race in American society through a socio-historical lens. The course will cover the American story of major national and cultural events as they pertain to race including, but not limited to: treaties forged and broken with indigenous peoples; American slavery; western expansion and shifting borders around established communities; The Chinese Exclusion Act; and more. Building off historical context, students will examine social conceptions of race as they are currently understood. This course contains a significant writing component based in student essays responding to the topics at hand.

GUNN SCHOLAR

The Gunn Scholar program is an endowed program that offers selected students opportunities to pursue research topics of their own choosing in the Paula and George Krimsky Archives and Special Collections. Students may apply to the program at the end of the junior year and complete a vearlong research project in senior year. Gunn Scholars finalize the scope of their thesis, develop a written record of their research and present their findings at a conference in the spring. Students conduct primary-source research and place-based learning within the school's archives. In previous years, Gunn Scholars have had opportunities to expand their research to other archives and collections, including those at the National Baseball Hall of Fame and Museum in Cooperstown, New York, the National Archives Museum in Washington, D.C., and the Beinecke Rare Book & Manuscript Library at Yale University Library. A generous gift from the Class of 1957 has assured the annual publication of Gunn Scholar research and each student's illustrated paper is added to the archives, thereby enriching the school's history and creating opportunities for further study. Since 2018, Gunn Scholars have presented their papers at the annual Rooted Research Conference, hosted by The Frederick Gunn School.

AP COMPARATIVE GOVERNMENT AND POLITICS

As described by 2023 College Board course documents, AP Comparative Government and Politics introduces students to the rich diversity of political life outside the United States. The course uses a comparative approach to examine the political structures; policies; and political, economic, and social challenges of six selected countries: China, Iran, Mexico, Nigeria, Russia, and the United Kingdom. Students compare the effectiveness of approaches to many global issues by examining how different governments solve similar problems. They will also engage in disciplinary practices that require them to read and interpret data, make comparisons and applications, and develop evidence-based arguments. The AP examination is administered to all students enrolled in this course. Students must be approved by the Academic Office, in consultation with the department and using criteria that take into account grades, comments, and intellectual maturity.

AP EUROPEAN HISTORY

As described by 2023 College Board course documents, In AP European History, students investigate significant events, individuals, developments, and processes from approximately 1450 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 AP examination is administered to all students enrolled in this course. Students must have completed a fullyear course in U.S. History, and be approved by the Academic Office, in consultation with the department and using criteria that take into account grades, comments, and intellectual maturity. Summer work is required.

UPPERCLASSMEN ELECTIVE COURSES — ONE TERM

THE FOLLOWING ELECTIVE COURSES ARE **OPEN TO JUNIORS AND SENIORS UNLESS** OTHERWISE NOTED. THE DEPARTMENT RESERVES THE RIGHT TO OFFER ONLY THOSE COURSES THAT MEET MINIMUM **ENROLLMENT REQUIREMENTS.**

WILDERNESS PRESERVATION

This class investigates how the fact of climate change impacts and is impacted by human culture. After studying the history of scientific thought on climate change, students will be encouraged to develop their own thinking on contemporary issues like the Paris Accords and other key moments in the history of humanity's response to climate change. This class will be partially guided by student interest, and students should expect to do some significant pursuit of their own curiosity. Readings will include relevant articles and short essays from Amitav Ghosh, Ben Hale, and Carolyn Merchant, as well as government reports on the effects of climate change. Class time will be devoted to discussion and inquiry associated with our reading, culminating in a final research project.

THE CULTURE OF CLIMATE CHANGE

This class investigates how the fact of climate change impacts and is impacted by human culture. After studying the history of scientific thought on climate change, students will be encouraged to develop their own thinking on contemporary issues like the Paris Accords and other key moments in the history of humanity's response to climate change. This class will be partially guided by student interest, and students should expect to do some significant pursuit of their own curiosity. Readings will include relevant articles and short essays from Amitav Ghosh, Ben Hale, and Carolyn Merchant, as well as government reports on the effects of climate change. Class time will be devoted to discussion and inquiry associated with our reading, culminating in a final research project.

ENVIRONMENTAL JUSTICE

Have you ever wondered why the houses around highways are often the poorest neighborhoods in a city, while the neighborhoods around parks are often the richest? If so, then you've already thought about an idea central to environmental justice! The field of environmental justice investigates how human progress impacts communities environmentally and asks what groups are forced to live in toxic or undesirable environmental conditions. We will study the history of environmental justice issues and initiatives from the creation of Central Park to the water crisis in Flint, Michigan, to contemporary global phenomenon of climate refugees. Students should expect one significant field trip to learn more about Environmental Justice initiatives in a nearby city. Readings will include Clean and White by Carl Zimring and The Park and the People by Rosenzweig and Blackmar. Class time will be devoted to discussion and inquiry associated with our reading, culminating in a final research project.

PSYCHOLOGY ONE-TERM ELECTIVES

SOCIAL MINDS: EXPLORING THE POWER OF INDIVIDUAL INFLUENCES

This one-term course in social psychology will provide an overview of the fundamental principles of individual influences with a focus on how individual behavior, attitudes and beliefs are shaped by social influences. Major topics will include a deep dive into the factors that influence individual behavior, including social norms, stereotypes, and prejudice. This course will also examine the ways in which individuals interact with others and form relationships.

There are no prerequisites for this course. This course can be taken independently of or in addition to Exploring Human Interactions: The Psychology of Group Dynamics.

EXPLORING HUMAN INTERACTIONS: THE PSYCHOLOGY OF GROUP DYNAMICS

This one-term course in social psychology would focus on the fundamental principles of group dynamics with an emphasis on how people interact in group settings. Students will explore the factors that influence group behavior, including social influence, conformity, and leadership. This course will also examine the ways in which group dynamics can shape individual behavior, attitudes, and beliefs. There are no prerequisites for this course. This course can be taken independently of or in addition to Social Minds: Exploring the Power of Individual Influences.

COGNITIVE PSYCHOLOGY: LEARNING HOW WE LEARN

This one-term course in social psychology will provide an overview of the cognitive processes that underlie human learning and memory. Students will explore the fundamental principles of cognitive psychology with a focus on how people acquire, process, store, and retrieve information in their daily lives. This course will also examine the factors that influence learning and memory, such as attention, motivation, and context. There are no prerequisites for this course. This course can be taken independently of or in addition to Inside the Mind: Understanding Thinking, Motivation, and Decision-Making Through Cognitive Psychology.

INSIDE THE MIND: UNDERSTANDING THINKING, MOTIVATION, AND DECISION-MAKING THROUGH COGNITIVE PSYCHOLOGY

This one-term course in cognitive psychology will provide an overview of the cognitive processes involved in human thinking, motivation and decision making. Students will explore the fundamental principles of cognitive psychology with a focus on how people perceive, process, and use information in their daily lives. This course will also examine the factors that influence motivation and decision-making, such as emotions, biases, and social pressures. There are no formal prerequisites for this course. This course can be taken independently of or in addition to Cognitive Psychology: Learning How We Learn.

GROWTH AND CHANGE: NAVIGATING THE COMPLEXITIES OF HUMAN DEVELOPMENT

This one-term foundational course in psychology will provide an overview of human development from infancy through adolescence. Students will explore the physical, cognitive, and emotional changes that occur during each stage of development. The course will also explore the roles of genetics and environment in shaping development as well as the impact of culture, parenting, and other social factors. Topics will include prenatal development and birth, infancy and early childhood development, middle childhood development, adolescence and emerging adulthood, cognitive development, socioemotional development including attachment, self-concept, and socialization, and cultural and social influences on development. There are no prerequisites for this course.



DIPLOMA REQUIREMENTS: 1 CREDIT VISUAL AND/OR PERFORMING ART

(This can be accomplished through three single-term courses or one full-year course.)

PERFORMING ARTS

MUSIC - JAZZ BAND (JB)

This ensemble will rehearse and perform an eclectic variety of band music, including jazz, funk, blues, rock, popular, symphonic, holiday, film, and more. All band instruments are welcome! Brass and woodwind instruments must have at least one year of previous experience. Guitarists, percussionists/drummers, bassists, and pianists must audition or have previous experience. Students should have a basic skill level of reading music. Obligations include rehearsals during and after school (if applicable) and attendance to all performances (on campus, local, regional, national, etc.). Students will learn how to work together to perform professional-level music as an ensemble. while developing individual fundamentals towards a mastery of skills. For audition information please contact Ron Castonguay, Director of the Arts and Music Director, at castonguayr@frederickgunn.org. Prerequisites: Previous instrumental experience and/or audition. Full year, one credit; Entry into the second semester is possible with permission of the instructor (2/3 year, 2/3 credit).

MUSIC - JAZZ BAND ADVANCED (JBA)

Requirements for students continue to increase dramatically from this level through the Conservatory level, including a more advanced skill level requirement, enhanced performance achievement tests, mandatory personal repertoire, higher individual expectations, and increased extracurricular and leadership responsibilities. Prerequisites: JB or teacher recommendation; must fulfill requirements specified by the instructor. A contract must be signed for this level; Full year, one credit.

MUSIC – JAZZ BAND CONSERVATORY (JBC)

This is the highest level for this course and is geared to prepare students for a college music experience. A high level of musicianship is expected, including a more advanced skill level, mandatory personal repertoire, higher musical performance and individual expectations for assessments, increased extracurricular and leadership responsibilities, mandatory weekly private lessons, and possible individual conducting performances. Prerequisites: JBA Honors or teacher recommendation; must fulfill requirements specified by the instructor. A contract must be signed for this level; Full year, one credit.

MUSIC - STRING ENSEMBLE (SE)

Any string player who has at least one year of playing experience and is efficient in reading music is welcome into this ensemble. Violin, viola, cello. and double bass will be the instrumentation. The repertoire of the course will primarily be classical by nature, but exploration of film and popular music may be part of the curriculum. Obligations include rehearsals, both during the day and after school (if applicable), and attendance at all competitions and performances (on campus, local, regional, national, etc.). Students will learn how to work together to perform professional level music as an ensemble while developing individual fundamental musicianship towards a mastery of skills. Students from this ensemble must participate in Symphonic Orchestra, if applicable. Prerequisites: Previous instrumental experience and/or audition and recommendation from instructor. Full year, one credit; entry into second term is possible with permission of the instructor (2/3 year, 2/3 credit).

MUSIC - STRING ENSEMBLE ADVANCED (SEA)

Requirements for students continue to increase dramatically from this level through the Conservatory level, including a more advanced skill level requirement, enhanced performance achievement tests, mandatory personal repertoire, higher individual expectations, and increased extracurricular and leadership responsibilities. Prerequisites: SE or teacher recommendation; must fulfill requirements specified by the instructor. A contract must be signed for this level; Full year, one credit.

MUSIC - STRING ENSEMBLE CONSERVATORY (SEC)

This is the highest level for this course and is geared to prepare students for a college music experience. A high level of musicianship is expected, including a more advanced skill level, mandatory personal repertoire, higher musical performance and individual expectations for assessments, increased extracurricular and leadership responsibilities, mandatory weekly private lessons, and possible individual conducting performances. Prerequisites: SEA Honors or teacher recommendation; must fulfill requirements specified by the instructor. A contract must be signed for this level; Full year, one credit.

MUSIC - VOCAL ENSEMBLE (VE)

Performing will be the primary objective of this ensemble, known at most schools as Chorus. Music will consist of classic choir repertoire, including sacred, secular, and spiritual as well as popular and jazz music sung in ranges from unison to sixpart harmony. Obligations include rehearsals, both during the day and after school (if applicable), and attendance at all competitions and performances (on campus, local, regional, national, etc.). Entry into this ensemble is based upon audition. Proper vocal technique, choral balance in combination with healthy singing and sight-reading will be important facets of the curriculum. Students will learn how to work together to perform professional level music as an ensemble while developing individual fundamental musicianship towards a mastery of skills. For audition information please contact Ron Castonguay, Director of the Arts, at castonguayr@ frederickgunn.org. Prerequisites: Previous singing experience and/or audition and recommendation from instructor. Full year, one credit; entry into second term is possible with permission of the instructor (2/3 year, 2/3 credit).

MUSIC – VOCAL ENSEMBLE ADVANCED (VEA)

Requirements for students continue to increase dramatically from this level through the Conservatory level, including a more advanced skill level requirement, enhanced performance achievement tests, mandatory personal repertoire, higher individual expectations, and increased extracurricular and leadership responsibilities. Prerequisites: VE or teacher recommendation; must fulfill requirements specified by the instructor. A contract must be signed for this level; Full year, one credit.

MUSIC - VOCAL ENSEMBLE CONSERVATORY (VEC)

This is the highest level for this course and is geared to prepare students for a college music experience. A high level of musicianship is expected, including a more advanced skill level, mandatory personal repertoire, higher musical performance and individual expectations for assessments, increased extracurricular and leadership responsibilities, mandatory weekly private lessons, and possible individual conducting performances. Prerequisites: VEA Honors or teacher recommendation; must fulfill requirements specified by the instructor. A contract must be signed for this level; Full year, one credit.

ADVANCED PLACEMENT MUSIC THEORY

This full-year Music Theory Advanced Placement course is intended for advanced music students who plan on continuing their musical endeavors in college and is designed to prepare them for the AP Music Theory Exam administered in the spring. Students must have prior musical experience, including participation for a minimum of two years in a performing ensemble and/or have taken a private or classroom music theory course within the past two years. The instructor may grant special permission for entry. All topics covered in a first-year college music theory course will be included as well as the following: notational skills, scales and keys, chords and chord progressions, metric organization, rhythmic patterns, realization of Roman numeral chord progressions, repertoire identification and analysis, small musical forms, listening and dictation, sight-singing, and basic compositional techniques. Prerequisites: Must have two years of previous experience in a performing ensemble and/or in a private or classroom music theory course within the last two years, or permission from instructor. An entrance exam may be required. AP Credit will only be granted once the course is successfully completed and the AP Exam is administered.

THEATRE

ACTING I: THE ACTING PROCESS (FULL YEAR)

This active and exploratory yearlong acting course introduces students to the essential tasks of the actor's imagination and technique through individual and ensemble work. Students develop vocal, physical, and emotional techniques and engage in exercises that enhance creativity, characterization skills, and empathy. They apply this work to improvisations, monologues, scenes, text analysis, and physical storytelling. Students will gain a well-rounded understanding of acting, theatre, plays, auditioning, and theatre-making. No previous acting experience is necessary.

ADVANCED ACTING/FGS THEATRE COMPANY

This yearlong course continues the training of the student-actor with a focus on scene work, script analysis, devised material, voice, and movement. It allows students to develop an approach to character, text, and story beyond their own culture and experience. Exercises build on Acting I and encourage in-depth interpretation and character choices. Vocal and physical training focuses on developing techniques to explore heightened theatre material. Students develop and workshop various pieces of work to be presented to The Frederick Gunn School community. Prerequisite: An earlier department acting course, involvement in an FGS Theatre Company production, or permission of the Director of Theatre Arts.

COMBAT FOR STAGE AND SCREEN

Stage combat is the illusion of violence for the stage or screen. This class will explore stage combat moves. Classwork is active, engaging, and movement-based. Students will learn and develop safe and dramatically effective techniques of choreographed violence, along with pieces rooted in movement and storytelling. The course provides an opportunity to use the whole self: body, imagination, intellect, voice, and spirit. Students will be introduced to safe and compelling portrayals of violence for the stage and camera. The class focuses on training and practicing unarmed and sword and dagger stage combat skills.

IMPROVISATION AND THEATRE GAMES

This introductory course will explore the elements of improvisation with a focus on spontaneity, flexibility, and fun. Improvisation is for everyone. Life is made up as it happens, and improv is no different. The aim of this course is for students to heighten their observation and listening skills, and ensemble-building through various theatre games and exercises. Explore foundational improv tools to understand the principles of how improv works. Experience firsthand why improvisation is a way to discover more freedom, confidence, and positivity.

PLAYWRITING

This course is a laboratory for students to develop and explore their unique voice and vision and a chance to explore a variety of approaches to manifesting that vision theatrically. It is a foundational course designed to introduce young writers to the distinctive demands of this genre, with emphasis on character and plot development through conflict and dialogue. Students will write extensively, workshop their original stories, and learn rewriting techniques. The term will culminate in a staged reading or production of the short plays presented to the FGS community.

ADJUNCT COURSES

PRIVATE DANCE INSTRUCTION

This course provides students with the opportunity to work one-on-one with a professional dance instructor. Private instruction in dance is excellent for beginning students, students who have previous dance experience and are looking to improve their technique and artistry, but also for actors, skaters, and athletes who are looking to improve their technique - or who need specific coaching on technique, choreography, or audition preparation. In private dance instruction, students can expect to work on basic skills, stretching, positions, technique, precise foot placement, and stage character as well as musicality, strengthening of the legs and feet, and balance. Private lessons are scheduled once or twice per week for one hour. A yearlong commitment is required. The cost of private dance instruction is billed home. Full year, one day per week, 1/3 credit; Credit earned for this course may not be used to fulfill the Art diploma requirement.

PRIVATE MUSIC INSTRUCTION

Students are encouraged to pursue private study of an instrument at The Frederick Gunn School. These lessons offer students an individualized learning experience with a private instructor. Lessons are given in all orchestral and keyboard instruments. Students may also study voice, composition, jazz, popular and folk instruments. Students receive one 40-minute lesson per week, and are expected to practice a minimum of two hours per week. Students interested in private instruction should contact the Academic Office well in advance of the beginning of the academic year, so that appropriate scheduling arrangements can be made. A vearlong commitment is required. The cost of private music instruction is billed home. Full year, one day per week, 1/3 credit; Credit earned for this course may not be used to fulfill the Art diploma requirement.

VISUAL ARTS FULL-YEAR COURSES

AP STUDIO ART

This yearlong course is for highly motivated junior and senior art students. The scope of work is equivalent to that of an introductory college course in studio art, providing a special opportunity to prepare a portfolio for admission to art schools and to acquire knowledge of the professional art world and careers in the visual arts. Students work in both traditional and experimental media. AP Studio Art students are required to document their work photographically and to present a portfolio that demonstrates their proficiency. Students have the opportunity to submit materials to the College Board AP Studio Art Exam as well as National Open Portfolio Review Day and the Scholastic Art Awards competition. Prerequisites: Drawing and a portfolio review by the Visual Arts Chair.

YEARBOOK

This course is a full-year, visual arts course dedicated to the production of the school's yearbook, the main chronicle of student life at The Frederick Gunn School. Students work as a team to organize pages, design layouts, and gather photos that represent their year at The Frederick Gunn School. Although all students within the class share equal responsibilities in creating the yearbook, one editor will be selected each year to fulfill a leadership role within the group. Students of all years may take this course.

VISUAL ARTS ONE-TERM COURSES

BLACK AND WHITE PHOTOGRAPHY

This course is a beginning- to intermediate-level course designed to give students a thorough introduction to the 35mm film camera, film development, and printing in the darkroom. Aperture (f-stops), lenses and focusing, as well as shutter and film speeds are all thoroughly reviewed. Darkroom work accounts for a significant portion of the class and is the place where students will learn how to develop film and make enlarged prints from their 35mm negatives. Projects are designed to help students understand the relationship between shutter speed, aperture, and focus. Projects are also designed to help students develop a sense of photographic composition and style, as well as an understanding of how light and shadow effect the photographic process.

CERAMICS I

This course includes basic techniques and understanding of clay as an art medium. Coil, slab, and other hand-building techniques are introduced, followed by the opportunity to work a potter's wheel. A historical and cultural perspective is explored through slides, video, and discussion. Surface decoration is explored through glazing and firing techniques. No previous experience is required.

CERAMICS II

This course is designed for students who are proficient on the potter's wheel and who are interested in continuing to improve their techniques. Lid and handle making techniques are introduced. Altered forms on the wheel area also are investigated and incorporated into final pieces. High fire glazes are used for surface decoration, and students learn kiln stacking and firing procedures. Prerequisite: Ceramics I.

CIVIC JOURNALISM AND MEDIA MAKING

In this course, students learn and practice the skills of civic journalism over a variety of media platforms. Civic Journalism refers to the integration of journalism and democracy. Students learn how to use news and media outlets to facilitate healthy public engagement, conversation, and debate. They work together to write and publish The Highlander, the school's newspaper, record and produce "The Highlander Podcast," and finally film, edit, and broadcast "The Highlander News Network." This course is open to all students and may be taken for one or more terms for 1/3 art credit per term.

DIGITAL PHOTOGRAPHY

For novice students, this course is an introduction to the camera, photographic process and digital software. The emphasis is on artistic qualities of composition and image content. The course includes camera handling, exposure, darkroom techniques, and exploring the potential of digital photography. Students will master skills that will apply to all forms of image making and will gain an understanding of basic camera operations.

DRAWING

This introductory drawing class is based on the Betty Edwards workbook, *Drawing on the Right Side of the Brain*. During this class, students explore line, shading/tonal values, positive/negative space, and the principles and elements of design. Students work with a variety of media, including graphite pencil, charcoal, pastels, colored pencil, and mixed media. A historical and cultural perspective is explored through slides, visual aids, and discussion. No previous experience in art is required.

FILM PRODUCTION

This course is a general introduction to film production. A variety of film genres will be explored with an emphasis on narrative and documentary. All aspects of the process will be explored from camera functions to lighting, acting, and production methods. Two to three short film projects will be completed during the trimester. Students who have taken Digital Photography and Film Studies are preferred, but all are welcome.

FILM STUDIES

This course is a survey-based class that looks at the history of film from its very beginning in the late 1880s to now. Students watch, analyze and critique movies, both old and new, across many genres. The course will explore film analysis, the principles of film form, genre, as well as the elements of narrative, cinematography, acting, editing, sound, and film criticism. This is not a studio course.

INTERMEDIATE PRINTMAKING

This course is for students who have taken the Introduction to Printmaking class and are interested in furthering their skills in one or two specific areas like monotype and block printing or etching and engraving. Intermediate Printmaking allows interested and self-motivated students the freedom to explore, in-depth, areas of printmaking they find exciting. Participants will learn how to edition their work and are encouraged to develop a portfolio culminating in a show in the Perakos Family Cares Art Gallery.

INTRODUCTION TO PRINTMAKING

This course is for students who like to draw, make photographs, or are just looking for a new medium to try. During the class, there will be many forms of printmaking to explore: monotype, linoleum, or woodcut, engraving, etching, and gravure to name a few. Prints can be made simply by making marks with ink on a piece of Plexiglas® and transferring the ink onto to a piece of paper (monotype), or lines can be scratched (engraved) onto a metal or Plexiglas® plate, inked, then the surface is wiped clean and printed using paper and a printing press. Students in printmaking will have the opportunity to explore multiple printmaking processes during the trimester and have plenty of work to take home when done.

PAINTING

In this class, students learn color theory and explore color relationships in their paintings. Students explore various techniques in watercolors, oils, and acrylics. Landscape, portrait, self-portrait, and abstract expressionism are covered from a historical as well as a technical point of view. Methods of painting are introduced through examining the work of master painters. Prerequisite: Drawing



DIPLOMA REQUIREMENTS: 1 TERM OF PATHWAYS 1 TERM OF CITIZEN GUNN 1 TERM OF THE DECLARATION THE CIVIC CHANGEMAKERS PROJECT

PATHWAYS - (FRESHMEN)

Pathways is a mandatory, one-term diploma requirement for all freshmen. All sections of Pathways meet in the fall. The focus during the first year of our citizenship curriculum is self-awareness - emotional, physical, and intellectual - so that freshmen may adjust seamlessly to The Frederick Gunn School. Students have conversations about making healthy choices and behaving responsibly, and they learn executive functioning skills to become more intentional in their approach to learning. We also orient students to various guiding documents such as our Academic Merit system, the Character Statement, our discipline system, and the Honor Code. The final project is a "Letter to Self," which is completed at the end of the trimester. Students will read the letter during their senior dinner. Essentially, students have the opportunity to take stock of themselves and find their footing on campus. Grading in this course will be on a Credit/No Credit basis.

CITIZEN GUNN - (SOPHOMORES)

Citizen Gunn is a one-term (winter or spring) course that is required of all sophomores. This course will focus on helping students to become active citizens at The Frederick Gunn School through an in-depth study of Frederick Gunn's life coupled with relational and community-building initiatives to help students accumulate superior interpersonal skills. Students will grow to understand the morality of our founder to help them explore their own personal moral code and reflect upon the deeper meaning of their individual life as a member of our learning community. Service to others and promotion of the common good inform many of the course activities and discussions. Civic Online Reasoning lessons will help students navigate their digital world in order to become engaged, well-informed citizens who desire to build trust within their future communities and champion diversity, equity, and inclusion. During the conclusion of the course, each student will develop a personal statement of moral principles, which they will deliver to their class at the end of the term. Grading in this course will be on a Credit/No Credit basis.

THE DECLARATION - (JUNIORS)

The Declaration is a one-term course that is required of all juniors. Through an in-depth study of our country's seminal documents and speeches, students will explore the ideas of liberty and equality as they pertain to citizenship. Students will study the art of rhetoric and the vital role language plays in building political friendships in our democracy. Weekly debates will help students construct and frame their perspective concerning democratic citizenship. Students will meet with local leaders to learn how they build community and political friendships in town. Over the course of the trimester, students will prepare and give a speech to the entire school community.

CIVIC CHANGEMAKERS PROJECT - (SENIORS)

The Civic Changemakers Project (CCP) is a diploma requirement for all seniors that must be completed by the end of the senior winter trimester. The CCP emphasizes civic action and acting on convictions. The project may involve a range of activities, including civic media-making, alliance building, participation strategy development (e.g. contacting political officials or interest groups), or a meaningful and intentional service project.

CIVIC JOURNALISM AND MEDIA MAKING

In this course, students learn and practice the skills of civic journalism over a variety of media platforms. Civic Journalism refers to the integration of journalism and democracy. Students learn how to use news and media outlets to facilitate healthy public engagement, conversation, and debate. They work together to write and publish The Highlander, the school's newspaper, record and produce "The Highlander Podcast," and finally film, edit, and broadcast "The Highlander News Network." This course is open to all students and may be taken for one or more terms for 1/3 art credit per term.



42 INDEPENDENT STUDY

THE PROCESS FOR ESTABLISHING AN ISP IS AS FOLLOWS:

- Interested students should approach the Academic Office with their ideas for the coming year by the midpoint of the Spring Term by requesting a meeting with the Assistant Head of School for Teaching and Learning or the Director of Studies (both of whom can be reached at academics@frederickgunn.org).
- 2 If the project seems possible, the interested student will be asked to complete an ISP form and submit a proposal. This will include meeting with the appropriate department chair and working with both the department chair and the Academic Office to describe the learning outcomes and educational material that will be used for the ISP, to be detailed in the proposal.
- 3 The Department Chair and Academic Office will then approach a suitable faculty advisor. Assuming the right match can be found between student interest and faculty availability, the ISP will then be approved and added to the student's course load for the following year.

Prerequisites: ISPs are only open to returning students. Students in their first year should follow a standard course load at The Frederick Gunn School.