

UPPER SCHOOL COURSE CATALOG

CANNON SCHOOL

2022-2023

Beyond preparing our ninth- through twelfth-grade students for college, the Upper School experience challenges them to discover their own paths to successful lives. They meet graduation requirements in social studies, English, science, mathematics, world languages, and the arts. The Upper School offers both Advanced Placement and Advanced Topics courses, which are available after the Freshman year. We help students balance rigorous programs of study with extracurricular activities so they develop their interests, passions, and talents in transformational ways. Our graduates are independent learners and impact-makers who understand how they will make a difference in an increasingly diverse world.

GRADUATION REQUIREMENTS

Twenty total credits minimum (one year = one credit). Most students accumulate many more credits.

English	four years	
Mathematics	three years	(including a course that covers trigonometry)
Social Studies	three years	(including United States History or Advanced Topics in U.S. History)
World Languages	three years	(consecutively in same language is recommended)
Science	three years	(including Biology and Chemistry; Physics is required of ninth graders enrolled at Cannon)
Arts	two years	
Physical Education	one year	(or equivalent athletic participation)

Earning Credits in Upper School

Credits a student earned while in middle school, even in Cannon Upper School courses, **do not** count among the credits required for graduation from the Upper School.

All students must be enrolled in an English course at all times. In addition, selective colleges prefer to see at least three years of the same world language; four years of a world language is encouraged.

Students may not graduate from Cannon's Upper School in fewer than four years.

University of North Carolina Requirements

For University of North Carolina system schools: Students and parents should note that students will need Algebra I, Geometry, Algebra II, and one unit beyond Algebra II (for which Algebra II is a prerequisite) for admission.

NCAA Core Requirements

Students interested in intercollegiate athletics should check with College Counseling as they plan courses in the junior and senior years in order to comply with NCAA regulations. Core course requirements for NCAA eligibility are currently English (four years), mathematics (three years – Algebra I or higher), natural/physical science (two years with one year of lab, if offered), additional English, math or natural/physical science (one year), social science (two years), additional courses (any area previously mentioned or world language – four years). A total of 16 courses is required.

COURSE LOAD

Every Cannon Upper School student is required to carry a load of six courses. A student may petition the Upper School head for an exemption to this policy or for an exemption from the total course load requirement. Possible reasons for an exemption include illness or an extremely time-consuming extracurricular activity in which the student is performing at a high level of recognition.

TRANSFER CREDIT

Students transferring to Cannon Upper School will under certain circumstances receive credit for passing work done at previous institutions. Decisions regarding transfer credit are made by the Assistant Head of US for Academics, US Academic Coordinator, and College Counselors. In general, the courses taken at another school must correspond to courses offered at Cannon. Students transferring to Cannon should pay careful attention to the school's graduation requirements.

PHYSICAL EDUCATION REQUIREMENTS

Students are required to earn one full credit of physical education over the Upper School career from one of the following:

1. Interscholastic athletics may meet the physical education requirement when a student begins a sport at the starting date of practice and completes the season satisfactorily.
2. Alternative physical education credit permits a student to meet the requirement by participating in activities outside of school, such as aerobics or dance or a sport not offered at the school. A student meeting the P.E. requirement in this fashion must do so **by the end of the Junior year**. If the requirement has not been met by then, the student will be automatically enrolled in a physical education course offered by Cannon during the student's senior year.

Approval of participation for credit must be secured **in advance** from the US Academic Coordinator and Assistant Head of US for Academics by submitting a proposal that describes the activity, the number of times per week it meets, and how many weeks it lasts. A minimum of 120 hours must be logged **during one academic year**. Hours may not be completed during the summer months.

3. A physical education course offered by the Upper School, such as Wellness and Long-term Athletic Development or Yoga, also earns the required one credit.

Although a student is encouraged to participate as much as possible in athletics and physical activity within and outside the auspices of the school, he or she may not receive more than one physical education credit in total in the Upper School.

ADVANCED TOPICS & ADVANCED PLACEMENT COURSES

The pace is fast and the standards high in all Cannon courses, but the standards for Advanced Topics (AT) and Advanced Placement (AP) courses are even higher and the assignments more demanding.

Participation in AT or AP courses is contingent upon the recommendation of the teacher and department. Pre- or co-requisites are necessary for most courses. AT and AP courses have weighted grades, which means that for grade point average calculations, one quality point is added to the student's grade in an AT or AP course.

INDEPENDENT STUDY FOR SENIORS

Any 12th grade student who has a desire to pursue a course not offered for credit at Cannon, may, in collaboration with a Cannon faculty member, create an independent study course. Requirements for course approval are provided by the Assistant Head of US for Academics and US Academic Coordinator and only occur when the independent study is done with a current Cannon faculty member or Cannon-approved teacher.

ONLINE COURSES

Online courses are increasingly available for high school students from many providers. Such courses can provide an opportunity for students to experience courses that are not currently offered at Cannon. However, any enrollment in online courses must be discussed thoroughly with a student's college counselor as well as with the Assistant Head of US for Academics. Online courses are not given Cannon School credit.

COURSE RECOMMENDATION PETITION

Teacher recommendations determine which courses students are placed into each year. The course recommendation process is thorough and collaborative; it includes conversations between students' classroom teachers, advisor, college counselor, Assistant Head of US for Academics, and Learning Specialist. Each department outlines and shares with students its criteria for recommendations. Students may petition to overturn a teacher's course recommendation, in which case they must schedule a meeting with their teacher, advisor, and college counselor to discuss enrollment in a higher-level course for which the student was not recommended. Students seeking recommendations into AT or AP courses must perform exceptionally well in the subject (or prerequisite subjects). The US Assistant Head of Academics and Academic Coordinator will make the final decision as to whether or not a student may overturn a teacher's recommendation.

WINTERM COURSE CREDIT ON TRANSCRIPT

Winterm courses award $\frac{1}{4}$ credit on a student's transcript for each year for a total of 1 credit for four years of Winterm in the Upper School.

Winterm course credit will appear as "Pass" on a transcript for students who meet the criteria below to receive credit.

In order to receive credit a student **must** meet the following criteria:

- Take two $\frac{1}{2}$ day courses, OR one full day course, OR a Winterm school-sponsored trip
- Students must complete all course work to receive credit



CANNON SCHOOL

ENGLISH

HONORS ENGLISH I

Prerequisite: None

English I invites students to discover joy in language by selecting their own independent reading books, reading poetry and inspiring prose out loud together, and writing about topics that are personally meaningful. Course texts include classic authors as well as contemporary voices in novels, short stories, poems, and nonfiction. Frequent formal and informal writing exercises teach students how to write with clarity, precision, and power. The course also reinforces the fundamentals of standard English grammar as it develops students' vocabularies. English I begins a four-year focus on the writing process, which threads through the rest of the core English curriculum. During the third trimester, students in English I will choose an elective course in which they will gain exposure to both a new teacher and new subject matter while retaining continuity of the skills being taught.

HONORS ENGLISH II

Prerequisite: Honors English I

Building on English I, English II introduces students to the genre of academic writing. Students learn to develop their own writing process, which includes drafting, revising, editing, conferencing, and self-reflection. Vocabulary development, grammar lessons, and a study of punctuation are included in the course via *The Only Grammar and Style Workbook You'll Ever Need*, and *Vocabulary Workshop Level E*.

Student-driven inquiry and discussion are at the heart of English II. Student responses to essential questions, writing prompts, and readings shape the direction of the class. Students read texts that explore and dig deeply into issues sparked by literary and humanistic questions. Recent texts include: *The Alchemist*, *The Bean Trees*, *A Thousand Splendid Suns*, *Brave New World*, *Frankenstein*, poetry, nonfiction selections, and essays. English II requires students to work collaboratively and independently on writing projects, class presentations, and in discussions. During the third trimester, students in English II will choose an elective course in which they will gain exposure to both a new teacher and new subject matter while retaining continuity of the skills being taught.

HONORS ENGLISH III

Prerequisite: Honors English II

English III is a selected survey of American Literature. Frequent and varied reading selections invite students to explore America's literary, cultural, and social histories. Recent texts include: Selected American short stories; Arthur Miller's *The Crucible*; Shirley Jackson's *We Have Always Lived in the Castle*; Sue Monk Kidd's *The Secret Life of Bees*, and F. Scott Fitzgerald's *The Great Gatsby*. Students compose more complex writing projects across genres in English III, which ask them to consider the literature explored in the course and express original ideas about the literature. A vocabulary curriculum is a key component of writing practice in class, and vocabulary usage is a year-long area of focus. During the third trimester, students in English III will choose an elective course in which they will gain exposure to both a new teacher and new subject matter while retaining continuity of the skills being taught.

ADVANCED TOPICS: AMERICAN LANGUAGE AND LITERATURE

Prerequisites: Honors English II & teacher recommendation

Advanced Topics: American Language and Literature prepares students to read and write in college. Students will compose across a variety of genres, including the thesis-driven analytical essay, the personal narrative, and an assortment of rhetorical and textual pieces. Understanding and growing into the writing process is one of our chief goals. Themed selections of nonfiction and important literary works from varied American authors launch writing projects and class discussions. All writing projects will include substantial, frequent revision and one-on-one conferences with teachers. The course culminates with the Portfolio Defense, a signature learning experience in which students defend their written works in front of a panel of Cannon peers, faculty members, and parents. Students enrolled in the course may - but are not required to - sit for the AP English Language and Literature exam at the end of the year.

HONORS ENGLISH IV

Prerequisites: Honors English III, Advanced Topics: American Language & Literature or equivalent

The goal of English IV is two-fold. The course prepares our college-bound seniors for the kind of work they will encounter in the years to come, and it introduces reading and writing relevant to their own lives. English IV offers a diverse selection of texts from various genres. Recent selections include: Altar's *Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked*; Haddon's *The Curious Incident of the Dog in the Nighttime*; Shakespeare's *Macbeth*; Marquez's *Chronicle of a Death Foretold*, and many other canonical and contemporary titles. Course readings are meant to capture students' attention and ignite their interests. Students also choose their own books for our Independent Reading program. English IV includes instruction in vocabulary, grammar, composition, public speaking, and researching. During the third trimester, students in English IV will choose an elective course in which they will gain exposure to both a new teacher and new subject matter while retaining continuity of the skills being taught.

ADVANCED TOPICS: ENGLISH LITERATURE AND COMPOSITION

Prerequisite: Honors English III, Advanced Topics: American Language & Literature or equivalent

Advanced English Literature and Composition exposes students to canonical and contemporary fiction and poetry and enhances their understanding of how meaning is created in literary texts. The course develops students' close reading skills and features various writing assignments, including character and thematic analyses, poetry explications, and self-reflective pieces that connect the literary and real worlds. The course's writing trajectory reinforces the iterative process of writing and thinking developed in previous English courses. Students begin with shorter analytical essays and then extend, complicate, and refine them into longer essays. Writing conferences, frequent (and graded) discussions, and student choice define the AT: English Literature and Composition experience. The course culminates with a signature learning experience in which students reflect on and create artifacts related to their course readings.

ENGLISH ELECTIVES

Note: English elective courses do not fulfill English credits required for graduation.

HONORS THE VOICE: POETRY AND FICTION WRITING

Co-Requisite: Junior: Honors English III or Advanced Topics American Language & Literature; Senior: Honors English IV or Advanced Topics English Literature and Composition or equivalent

Students must be juniors or seniors and must be enrolled in another English course (besides a film course) in addition to The Voice. The goal of this class is for students to develop and cultivate their individual literary voices through the writing of poetry. Although there is a moderate reading component to the course, a great deal of the material students read acts as prompts for what they write. In fact, many of the students' writing tasks early in the course are imitative in nature. By reading and examining the work of various authors, students are given license to experiment in their writing with many different types of voice. The most important component of the class is the writing itself, and each student is responsible for producing a large portfolio of work. Early in the semester the course operates in a seminar format and later changes into a creative writing workshop. The class workshops the students' writing so that each student may gain from the feedback of his or her peers. The rest of the course is a combination of seminar and lecture formats.

Over the course of the year, the emphasis will transition between poetry, and fiction.

HONORS FILM STUDIES

Prerequisite: Honors English I

Movies and the American Experience (First Trimester)

In this course, we will explore how movies help shape our national identity and help define what it means to be an "American." Our films will range from early cinema of 1895-1905, Buster Keaton's comedies, the films of Pre-Code Hollywood, the Marx Brothers, Classical Hollywood Cinema, post-World War II and McCarthy era films, film noir thrillers of the 1950s, the American musical, the American Western, 1950s teen films, protest films of the 1960s and 1970s, and current cinema.

International Cinema (Second Trimester)

The course in international cinema will focus not only on the variety of film styles but also the technological, economic, and political impact of the films. The lectures, screenings, and readings and discussions will explore international cinema as a political instrument and examine the impact of the global circulation of film in relation to the dominance of the American film industry.

Documentary Film (Third Trimester)

This course will introduce students to the history and to the theory of documentary film. Students will research the evolution of the documentary film genre and analyze the decision-making process of the director when making the documentary film. The documentaries viewed in class will focus on biographical, cultural, historical, political, and social subjects.

ARTS

VISUAL FOUNDATIONS

Prerequisite: None

This one-year introductory course focuses on two- and three-dimensional art production. Content includes the introduction to and application of the elements of art and principles of design. Within the course students are given the chance to choose trimester-long areas of study in: drawing, painting, graphic design, sculpture, or an introduction to photography and Adobe Photoshop. This course is the prerequisite for all Studio Art courses, Media Arts courses and Yearbook.

MEDIA ARTS I

Technology Integration: Adobe Photoshop and Illustrator

Prerequisite: Visual Foundations

This course focuses on using the Adobe Creative Suite (Photoshop and Illustrator) to further investigate the principles of graphic design, and digital art making. Students learn to better manipulate digital images, create digital illustration, and work with typography. Projects are designed to promote complex conceptual thought and a deeper understanding of visual communication.

MEDIA ARTS II

Prerequisite: Media Arts I

In Media Arts II, students will research and develop independent projects that guide them towards finding their voice as an artist and designer. They will further develop their technical skills using the Adobe Creative Suite (Photoshop, Illustrator, After Effects, Character Animator). Building on their work from Media Arts I, students will create a portfolio of pieces that focus on skills within a particular area of digital communication - be it for personal expression, or clients (both within and outside of the Cannon Community).

MEDIA ARTS SENIOR SEMINAR

Prerequisite: Visual Foundations, Media Arts I & II, and permission of instructor

This course is a continuation of the Media Arts II class, the student is the artist and the lab is their studio. Students will research and develop independent projects that focus on a particular visual idea or methodology using the Adobe Creative Suite. Continuing their work from Media Arts II, students will create a series of digital works based around their own artistic voices, ideas, and/or clients' needs.

STUDIO ARTS I

Prerequisite: Visual Foundations

A deeper exploration of artistic behaviors and practices, this course is a further examination of how art across various media can be used to communicate ideas. Students will develop their artistic voice by pursuing themes that they develop independently. Through a choice-based classroom model – students will have the flexibility to choose to work across a variety of media: drawing, painting, printmaking, sculpture, and digital production.

HONORS STUDIO ARTS II

Prerequisite: Studio Arts I

This course is an introduction to deep studio practice. Focusing on one or two particular forms of expression – be it drawing, painting, printmaking, culture, digital – students will have an introduction to creating a series of work based around their own artistic voice.

HONORS STUDIO ARTS III

Prerequisite: Studio Arts II

This course is a continuation of the Studio Arts II Honors class. Students will research and develop independent projects that focus on one or two forms of expression – be it drawing, painting, printmaking, sculpture, digital. Continuing their work from Studio Arts II, students will create a series of artworks based around their own artistic voices. As an honors level course, students will be expected to conduct more independent research and work on projects outside of class.

ADVANCED PLACEMENT STUDIO ART

Prerequisite: Visual Foundations and either Studio Arts I or Media Arts I

Studio Art Advanced Placement is designed for students who are seriously interested in the practical experience of art. The AP examination for the course is not written; instead, students submit portfolios for evaluation at the end of the school year.

The instructional goals of the class are to encourage creative as well as systematic investigation of formal and conceptual issues; to emphasize making art as an ongoing process that involves the student in informed and critical decision-making; to develop technical skills and familiarize students with the functions of the visual elements; and to encourage students to become independent thinkers who will contribute inventively and critically to their culture through the making of art. This course is designed as an intensive program requiring students to meet for a great number of contact hours. Students need to work beyond the class period, and trips to museums and galleries are required extensions of the course. (The college formula for a studio art course is two hours of outside work for every hour of class time.) Students may create a 2-D Design Portfolio (prerequisite is Studio Arts I or Media Arts I), 3-D Design or Drawing Portfolios (prerequisite Studio Arts II or completion of 2-D AP portfolio). Students may enroll for a second year to complete a different portfolio.

TECHNICAL THEATER

Prerequisite: Cannon Studios experience and/or permission of instructor. Students may repeat this course for credit.

This course is for students who have had experience in the technical elements of performance events and want to further explore areas including lighting, sound, costume and set design, and stage management. Students taking this course develop technical, creative problem-solving, and collaboration skills while widening their aesthetic imaginations. Students gain opportunities to apply those skills to real-world experiences by continued participation in Cannon Studios, the student technical team covering Cannon events such as community meetings, concerts, and theatrical performances. As they discover specific areas of interest within technical theater, students can specialize and delve deeper into those areas. Developing the ability to self-direct and communicate like a professional is critical to success in this course as students learn how to participate in and lead small teams in a project-based environment.

ACTING I

Prerequisite: None.

This class develops the basic tools of the actor: voice, body and imagination. Through exercises, monologues and scene study from modern, realistic plays, students explore a variety of approaches to the craft of acting. This is a performance class with some memorization work which must be completed outside of class. As acting is a highly collaborative art form, the ability to contribute to a positive, supportive class culture is critical to success.

Acting II

Prerequisite: Acting I or permission of instructor.

Emphasis is placed on further developing skills in acting through more challenging monologue and scene study. Students will also explore new approaches to acting technique, learning to take greater ownership over their own artistic growth. Having developed a fuller toolkit of acting techniques, they will gain a more sophisticated ability to apply the most effective technique to each creative challenge.

THEATER IN PERFORMANCE

Prerequisite: Acting 1 and Acting 2 or equivalent Cannon Theater Company experience, and permission of instructor. This course may be repeated for credit.

This course is for experienced acting students who are ready to commit to outside performance opportunities, including Cannon Theater Company's Fall One-Acts and our spring event, Arts Jam. In addition to preparing for specific performance events, students identify and work on individual areas of growth, developing skills that enable them to play a wider range of characters. Some participation beyond school hours is expected. The ability to self-direct, reflect, and communicate like a professional is critical to success in this course as students engage in the highly interdependent world of creative collaboration.

CONCERT CHORUS

Prerequisite: None

Students sing a wide variety of literature that has been composed for mixed choirs. Students learn techniques related to healthful and appropriate vocal production, body position, breathing, vowel shape and modification, and singing within an ensemble. While daily activities focus on preparation for performances, the class also explores aspects of music theory, music history, listening to music, ear training, part recognition and part singing. Members are expected to perform in several concerts each year as they constitute a large portion of each singer's grade. This course may be repeated.

STRING ENSEMBLE

Prerequisite: Prior strings experience or permission of the director.

This course accommodates the experienced instrumentalist who wants to explore performing classical music in a smaller setting. The class includes various quartets/quintets of strings, woodwinds, brass, and percussion. Students practice and perform within these smaller groups, but also work collectively as a Chamber Orchestra to explore music for larger groups. Performance opportunities for the different chamber ensembles will be required throughout the school year. This course may be repeated.

HONORS STRING ENSEMBLE II

Prerequisite: Strings Ensemble and teacher recommendation

Advanced String Methods is a fast-paced honors music course for students with previous string orchestra experience. In this class, students will play traditional orchestral repertoire while being exposed to a wide variety of musical genres. The expectation will be for students to spend time outside of class preparing music and performing in small and large groups. While during class students will investigate music history, music theory, and advanced string instrument techniques.

UPPER SCHOOL BAND

Prerequisite: Prior band experience or permission of the director

This class builds on the foundation established in middle school band. Students will perform in ensemble settings ranging from Concert Band, to Big Band, to small classical Chamber Ensembles. Regular individual practice, as well as the ability to self-govern and extensively collaborate in rehearsals are essential ingredients for success in this course. Students who have not had at least two years of middle school band experience will need to audition for the directors prior to registration.

CANNON SCHOOL JAZZ COMBO

Prerequisite: Audition and permission of instructor

This ensemble will explore modern jazz in the small combo format. We will do numerous performances throughout the year. Daily classes will focus heavily on jazz theory and improvisation. Participation in this class is granted by audition only. Students wishing to participate in this class must have had at least one year of Jazz 1 prior to registration. This course may be repeated.

MUSIC TECHNOLOGY I

Prerequisite: None

In this course, students will learn the language and mechanics of music (melody, harmony, rhythm, form) through composition utilizing some of the latest in music technology. In collaborative work with their fellow classmates, the students will learn to compose original music as well as arrange existing tunes. They will learn about many of the instruments commonly used in contemporary recording as well as the basics of multi-track recording. Interwoven will be excursions in the fundamentals of music theory and the foundation we stand on through examination of contemporary music history. The course is designed for the music novice. Prior experience in music is a benefit, but is in no way a prerequisite.

MUSIC TECHNOLOGY II

Prerequisite: Music Technology I

Building upon the foundation set during their time in Music Tech 1, Tech 2 students will deepen their compositional skills through study of some more industry standard software such as Ableton Live and the Ableton Push midi controller hardware. This software will offer the students a much more broad palette of both midi and audio voices, as well as a myriad of new ways to manipulate those sounds. With Ableton, you have a choice of either planning and pre-recording your work, or actually performing in real time (making decisions on the fly as you go, like a Jazz musician would). We will learn to do both. Your music will thereby have even greater levels of complexity. Upon completion of introductory benchmarks with this new software and hardware, the students' year will largely build upon the autonomy we honed in Music Tech 1 and focus on self-directed projects. At the end of the year, they will walk away with a well stocked audio portfolio of great new music.

CREATIVE DESIGN AND ENGINEERING I

Prerequisite: None

The Creative Design and Engineering (CDE) I course is a project-based, hands-on exploration of the Iterative Design Engineering process with a focus on aesthetics and functionality. Students will master entry-level design and skills in project planning, including idea curation and development, drawing and plan development, and material and time budgeting; fabrication and project refinement; and self- and peer-reflection and assessment. Ultimately, students will present their journey of growth in a variety of formats, including live presentation and portfolio websites.

Students are introduced to a variety of fabrication tools in areas such as woodworking, sewing, and basic electronics, as well as areas of computer-aided design (CAD) such as 3D printing, coding, laser cutting, and CNC cutting.

This course serves as a prerequisite for students to move to advanced programming, design, and art-tech fusion courses.

CREATIVE DESIGN AND ENGINEERING II

Prerequisite: Creative Design and Engineering I

The Creative Design & Engineering (CDE) II Course provides students an opportunity to further develop and challenge their idea curation; project planning, design, and fabrication; self- and peer-assessment; and storytelling skills. Through individual and group projects, students will use Iterative Design Engineering to respond to increasingly challenging design prompts, while developing physical and digital artifacts that demonstrate their full creative potential. Students will also explore their interests and passions to create projects of their own choosing. Students will finish the course with an understanding of the design and fabrication process and how it can apply to real-world production scenarios in areas such as woodworking, sewing, and basic electronics, as well as areas of computer-aided design (CAD) such as 3D printing, coding, laser cutting, and CNC cutting. Students will document and share their journey of growth in a variety of formats, including live presentation and portfolio websites.

CREATIVE DESIGN AND ENGINEERING III

Prerequisite: Permission of instructor

The Creative Design & Engineering (CDE) III Course is an opportunity for students to further deepen and practice their design and maker skills. Students, with the facilitation of an instructor, will design and carry out several large-scale projects executed over the course of the school year, by selecting, designing, executing, and reflecting on projects that allow them to learn or refine skills and tools introduced in CDE I and CDE II. A significant portion of their projects will be designed to service an audience in the Cannon or Concord community. Students will finish the course with a deeper understanding of the design and fabrication process and how it can apply to real-world production scenarios in areas such as computer-aided design (CAD), woodworking, metalworking, electronics, textiles, 3D printing, coding, laser cutting, and CNC cutting. Students will document and share their journey of growth in a variety of formats, including video, live presentation and portfolio websites.

CREATIVE DESIGN AND ENGINEERING IV

Prerequisite: Creative Design and Engineering III and permission of instructor

The Creative Design & Engineering (CDE) IV Course is for students who want to pursue larger, more complex, more challenging, and more rewarding design and engineering projects. Students will follow the principles and project flow of CDE III with an expectation of higher quality craftsmanship and attention to detail. Students, with the facilitation of an instructor, will design and carry out several large-scale projects executed over the course of the school year, by selecting, designing, executing, and reflecting on projects that allow them to learn or refine skills and tools introduced in CDE I, II and III. A significant portion of their projects will be designed to service an audience in the Cannon or Concord community. Students will take on a large role in mentoring other members of the CDE program. Students will finish the course with a deeper understanding of the design and fabrication process and how it can apply to real-world production scenarios in areas such as computer-aided design (CAD), woodworking, metalworking, electronics, textiles, 3D printing, coding, laser cutting, and CNC cutting. Students will document and share their journey of growth in a variety of formats, including video, live presentation and portfolio websites

YEARBOOK

Prerequisite: Visual Foundations, or permission of instructor
Students may repeat this course for credit.

The course emphasizes both theoretical and practical matters, from aesthetic issues of graphic design to meeting publication deadlines and communicating with business partners. The class produces Cannon School's yearbook, *The Flashback*. To succeed in this course, students must be self-motivated, creative, outgoing, and resourceful adaptive experts. All students participate in a wide range of activities related to producing the yearbook: designing themes and layouts; writing copy; learning digital photography skills; selecting, and editing photographs; and proofreading. Students are also introduced to the business aspects of publications, including financing, advertising, and deadline-contingent publication costs. This course requires some afternoon/evening commitments to photograph school events such as sporting contests, performances, etc.

This is a hands-on, collaborative, team-oriented course with regular writing assignments and design projects which allow students to apply acquired knowledge.

MATHEMATICS

HONORS ALGEBRA I

Prerequisite: Pre-algebra, full-year course in middle school

Algebra I introduces students to basic functions, their graphs, and the rules of solving equations. Topics of the course include the real number system, polynomials, linear and quadratic equations and inequalities, factoring, exponents, and radicals. Students explore algebraic concepts using technology, statistics, and practical applications.

HONORS GEOMETRY

Prerequisite: Honors Algebra I, full-year course in middle or high school

This course features a team-oriented, problem-based, and direct instruction model that provides students a foundation in geometric principles and a review of algebraic concepts. Students develop their understanding through group interactions in the classroom before summarizing concepts as a full class through teacher-led discussion and activities.

When broken into its roots, Geometry literally means to “measure the earth.” The main goal of this course is to learn to apply the previously learned ideas of arithmetic, algebra, and reasoning skills to measure the world around us. Throughout the course students learn various ways to measure and describe shapes to develop a deeper understanding of traditional geometry concepts, including length, symmetry, angle measure, perimeter, area, surface area and volume. Units focus on a variety of topics including transformations, similarity, congruency, trigonometry, circles, quadrilaterals, polygons, and three-dimensional solids, and students use their knowledge to solve a variety of problems. Students are continually asked to explain and justify their reasoning. Students are constantly working to strengthen their prerequisite algebra skills.

HONORS ACCELERATED GEOMETRY

Prerequisite: Honors Algebra I, Recommendation of Algebra I teacher

When broken into its roots, Geometry literally means to “measure the earth.” The goal of this accelerated course is to learn to apply the previously studied ideas of arithmetic, algebra, and reasoning skills to measure the world around us. Throughout the course students learn various ways to measure and describe shapes to develop a deeper understanding of traditional geometry concepts, including length, symmetry, angle measure, perimeter, area, surface area and volume. Units focus on a variety of topics including transformations, similarity, congruency, trigonometry, circles, quadrilaterals, polygons, and three-dimensional solids, and students use their knowledge to solve a variety of problems. Students are continually asked to explain and justify their reasoning. Students are constantly working to strengthen their prerequisite algebra skills and are cultivating their ability to apply the concepts of probability.

The course employs a team-oriented, problem-based approach, where students develop their understanding through group interactions in their classwork before summarizing the takeaways as a whole class. While many math classes have homework assignments that are a repetition of the day’s lesson, homework in this course takes a “mixed, spaced practice” approach. Problem sets are designed to allow students to focus on concepts both new and old. Students develop their understanding of a new topic over several days, and in some cases weeks, before it appears on a formal assessment. The added benefit is that older material is fresh in their minds, especially leading up to a new but related topic.

HONORS ALGEBRA II

Prerequisite: Honors Geometry or Honors Accelerated Geometry

Algebra II uses functions to explore algebraic concepts while making connections to the real world. Students develop solving techniques with the aid of technology. Topics include recursion; sequences and series; scatter plots; lines; parabolas; square root and absolute value functions; exponential and logarithmic functions; and systems of equations. All students are required to have a graphing calculator. Much of the content of the course is similar to that of Accelerated Algebra II, but the material is presented at a pace that is more appropriate for the student planning to take Honors Precalculus and Honors Calculus in high school.

HONORS ACCELERATED ALGEBRA II

Prerequisite: Honors Geometry or Honors Accelerated Geometry

This course uses functions to explore algebraic concepts in depth while making connections to the real world. Students develop sophisticated solving techniques with the aid of technology. Topics include recursion; sequences and series; lines; parabolas; square root and absolute value functions; exponential and logarithmic functions; systems of equations; right triangle trigonometry; and trigonometric functions, identities, and equations. All students are required to have a graphing calculator. One of the primary goals of the course is to prepare students for Accelerated Precalculus and subsequently AP Calculus.

HONORS FUNCTIONS, MODELING, AND TRIGONOMETRY

Prerequisite: Honors Algebra II. Open to juniors and seniors only.

This is a student-centered course in which students lead their own learning within a structured framework of mathematical ideas via questions they generate, in-class discussions, and projects that they create and present. Each unit will begin with problems to solve and explore. Students will be given concepts and resources to solve the problems, but will need to verify their approaches and the correctness of their work via dialogue and reason. The final assessment for each unit will be a project that the students will create, present and archive that clearly chronicles a robust connection between the topics within the unit and “real world” questions they explored. Projects will connect mathematical concepts to a wide array of topics such as: motion through space, drug dosage and efficacy, carbon dating, ecological impact of tides, the evolution of various technologies, social justice, urban planning, education, employment, populations, politics, history, and art. Some of the units will cover the following topics: Data Sets, Trigonometry, Sequences and Series, Exponential and Logarithmic Functions, Probability, Personal Finance, Normal Distributions.

HONORS PRECALCULUS

Prerequisite: Honors Algebra II or Honors Accelerated Algebra II

This course provides further development of advanced algebraic concepts and trigonometry. Topics include coordinate geometry, equations and inequalities, functions, trigonometry, graphs, exponents and logarithms, polynomials. Much of the content is similar to that of Accelerated Precalculus, but the material is presented at a pace that is more appropriate for the student planning to take AP Calculus in high school, but rather Honors Calculus.

HONORS ACCELERATED PRECALCULUS

Prerequisite Honors Accelerated Algebra II

This course begins with a review of polynomial equations. Students will then study higher order equations, inequalities, logarithms, the concept of e , conic sections and trigonometry. Complex numbers, sequences and series, and polar coordinates are also some of the other topics that will be covered. Calculus concepts, such as limits and derivatives, will be approached as well. An emphasis will be placed on viewing all problems from algebraic, graphical, and numerical perspectives. The goal of the course is to prepare students for AP, or college-level, Calculus.

HONORS CALCULUS

Prerequisite Honors Precalculus or Honor Accelerated Precalculus

This is a senior-level course designed to provide students with an introduction to the topics in a semester of college calculus. The course begins with a brief review of essential Precalculus concepts. The topics covered are developed in the study of the concept of a Limit, Evaluating Limits, Differential Calculus, Integral Calculus, and applications of Differential and Integral Calculus.

HONORS STATISTICS

Prerequisite: Honors Algebra II or Honors Accelerated Algebra II. Open to juniors and seniors only.

This is a course designed to provide students with exposure to Statistics. Students will learn to graph and describe one- and two-variable data sets, calculate standardized normal probabilities, perform linear regression, and design experiments. Students explore these applications of statistics in various fields such as business, science, and psychology. The course emphasizes the use of various technology tools. AP exams will not be given to students in this course.

ADVANCED PLACEMENT STATISTICS

Prerequisite: Honors Algebra II or Honors Accelerated Algebra II. Open to juniors and seniors only.

This challenging class introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to the broad conceptual themes of exploring data, observing patterns and departures from patterns; planning a study, deciding what and how to measure; anticipating patterns, producing models using probability and simulation; and statistical inference. The goal of the class is to prepare students for the Advanced Placement exam.

HONORS DISCRETE, PROBABILITY AND FINANCE

Prerequisite: Honors Accelerated Algebra II or Honors Algebra II. Senior level course only.

This course explores mathematics as it relates to the social sciences. Students examine different voting methods and how they can sometimes lead to vastly different, even paradoxical results. They study fair division of indivisible objects, such as a house, and use matrices to forecast population growth. Using graph theory, students resolve scheduling conflicts and design efficient routes.

Probability will include topics in combinatorial analysis and their application to computing probabilities. We will cover everything from basic probability and odds to compound (independence and mutual exclusivity), conditional, binomial and geometric events. We will also explore the applications of probability in such areas as gaming, statistics and actuarial computations.

This course examines the mathematics behind money in everyday life. Students learn to evaluate credit card offers and scrutinize the complexities, formulas, and history behind various tax returns. They compare different investment options and how long-term growth is affected by yields, dollar-cost averaging, and tax implications.

ADVANCED PLACEMENT CALCULUS AB

Prerequisite: Honors Accelerated Precalculus

This rigorous class covers the topics of a semester of college calculus. Students learn to analyze graphs through the lenses of limits, asymptotes, and continuity. They explore the concept of first and second derivatives and apply these concepts to curves. Second semester students are introduced to Riemann sums and integration concepts and techniques. The course emphasizes applications in physical, biological, and economic situations, and problems involving optimization and related rates. The goal of the class is to prepare students for the Advanced Placement exam in May.

ADVANCED PLACEMENT CALCULUS BC

Prerequisite: Advanced Placement Calculus AB

This intense class covers two semesters of a first-year college calculus course. It is designed for the strongest of math students who also have a great interest in the subject. The pace is rigorous, and students are expected to work intensely. Students learn all the topics of Calculus AB, plus parametric equations, Power Series, Taylor Series, vectors, and polar functions. The goal of the class is to prepare students for the Advanced Placement exam in May.

SCIENCE

HONORS PHYSICS

Prerequisite: None

Honors Physics is an inquiry-based course designed as the entry level course for ninth grade students. Frequent laboratory investigations provide students the opportunity to collect and analyze data. Class discussion leads to the development of appropriate models for describing how the physical world behaves. Conceptual understanding is the foundation for mathematical application and problem solving. Topics include those taken from classical mechanics (motion, forces, energy, and momentum) along with electricity and electric circuits.

HONORS ACCELERATED PHYSICS

Prerequisite: Recommendation of 8th grade Math and Science teacher

Honors Accelerated Physics is an inquiry-based, advanced mathematical physics course designed for ninth grade students motivated by scientific study. This course investigates topics with more challenging problem-solving and topics are covered at a quicker pace than Honors Physics. Frequent laboratory investigations provide students the opportunity to collect and analyze data. Class discussion leads to the development of appropriate models for describing how the physical world behaves. Conceptual understanding is the foundation for mathematical application and problem solving. When appropriate, the treatment of mathematical concepts will incorporate the use of trigonometry. Topics include those taken from classical mechanics (motion, forces, energy, and momentum) along with electricity and electric circuits.

HONORS CHEMISTRY

Prerequisite: Honors Physics or Honors Accelerated Physics

This guided-inquiry based course is designed to create an interest in and an understanding of the basic concepts of chemistry. Class discussion, based on laboratory experiences, will be used to develop the major ideas that describe the properties, composition, and structure of matter along with the role that energy plays to cause changes in matter. Topics include atomic structure, chemical formulas, chemical reactions and equations, stoichiometry, and thermo-chemistry. An emphasis on the development of strong problem-solving skills is a key focus of the course.

HONORS ACCELERATED CHEMISTRY

Prerequisite: Honors Physics or Honors Accelerated Physics

This course uses guided inquiry, empirical evidence, and class discussion to develop the major ideas that describe the properties, composition and structure of matter and the transformations of matter resulting from absorption or emission of energy. The course covers the content of the Honors Chemistry course at a faster pace along with some additional content areas such as molecular geometry, periodicity of elements, and acid-base chemistry. Students will be required to solve more complex problems that incorporate ideas from multiple content areas as they relate to each other. Students will work in small groups leading to whole class discussion along with activities that require independent development of some ideas.

HONORS BIOLOGY

Prerequisite: Honors Chemistry or Honors Accelerated Chemistry

This class is a rich introductory biology course that allows students to connect key concepts in biology through lab work, collaborative exploration, and guided research. Topics include biochemistry, cellular biology, genetics, evolution, ecology, and human biology. An essential component of the course is connecting biology to its real-world applications. To that end, students in biology will use the third trimester to design, implement, and present a biology-related research project.

HONORS ACCELERATED BIOLOGY

Prerequisite: Honors Chemistry or Honors Accelerated Chemistry

This course will require that students use strong cognitive and advanced analytical skills to engage with the major principles of biology. The content will be presented at a deeper level and at a faster pace than in an Honors Biology class. Additional laboratory experiences, advanced analysis and synthesis, and lab report writing will be incorporated as students connect biology concepts to their real-world applications. During the third trimester of the students will design, implement, and present a biology-related research project.

ADVANCED TOPICS: ENVIRONMENTAL SCIENCE

Prerequisites: Honors Chemistry or Honors Accelerated Chemistry

Co-requisite: Honors Biology

The goal of this course is to expose students to the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world. Students will use the scientific process and hands-on experimentation to analyze and evaluate environmental interactions, both historical and current, to predict models for future environmental dynamics. Students will engage in original research to examine local/regional environmental issues through multiple lenses and propose a solution with the potential to influence on-the-ground decision-making in our community. The course culminates with a signature learning experience where students conduct an independent research project on a topic of their choosing, within the realm of environmental science.

ADVANCED PLACEMENT CHEMISTRY

Prerequisites: Honors Chemistry or Honors Accelerated Chemistry

Co-requisite: Honors Biology or Honors Accelerated Biology

The AP Chemistry course is designed to meet the requirements and curriculum of a year-long, two semester general chemistry course usually taken during the freshman year of college. The course begins with a review of the major ideas developed in a first-year chemistry course with an emphasis on more complex (AP level) problems. Students will experience the challenge of more complex lab work and the need to develop good technique to ensure meaningful results while maintaining a lab notebook. The year will focus on the study on the six big ideas: Structure of Matter, Properties of Matter, Chemical Reactions, Rates of Reactions, Thermodynamics, and Equilibrium. Much of the assessment is based on students' ability to be successful with practice AP problems in preparation for the AP Chemistry exam in the spring.

ADVANCED PLACEMENT BIOLOGY

Prerequisites: Honors Biology and Honors Chemistry or Honors Accelerated Chemistry. The AP Biology course is designed as the equivalent of a college introductory course usually taken by biology majors during their first year. Students will take the Biology AP exam at the end of the year, and with an appropriate score, they may receive college credit. The course is built around a series of student-directed, inquiry-based labs and is focused on student research, experimentation, and analysis. Topics in AP Biology include evolutionary biology, the essential processes of living things, cellular energetics, homeostasis, and the interaction of biological systems.

ADVANCED PLACEMENT PHYSICS 1

Prerequisites: Honors Physics or Honors Accelerated Physics or science teacher recommendation

Co-requisite: Honors Precalculus, Honors Accelerated Precalculus or Honors Calculus

This course is an algebra-based, introductory college-level physics course. Students will develop their understanding of physics through inquiry-based investigations and solve problems that require the ability to incorporate many content areas into a single situation. Strong algebra skills are a necessity as many of the problems rely only on variables rather than numerical values.

Topics include: kinematics, dynamics, circular motion and gravitation, energy, momentum, simple harmonic motion, torque and rotational motion.

ADVANCED PLACEMENT PHYSICS C

Prerequisites: Honors Physics or Honors Accelerated Physics and Honors Precalculus, Honors Accelerated Precalculus or Honors Calculus

Co-requisite: Advanced Placement Calculus BC

The AP Physics course is equivalent to an introductory calculus-based physics course in mechanics that would be taken by engineering or physical science majors in college. The mechanics topics from Honors or Honors Accelerated Physics will be developed using calculus based mathematics along with more in-depth problem solving. Basic calculus is introduced in connection with physical principles. Students take the AP Physics C Mechanics exam in May, and with an appropriate score, they may receive college credit. Laboratory work using PASCO computer probes is less guided and requires more independent evaluation of data to develop concepts. In addition, students are required to keep lab journals, write lab abstracts, and deliver presentations of lab results.

SCIENCE ELECTIVES

HONORS MARINE SCIENCE

Prerequisites: Honors Chemistry or Honors Accelerated Chemistry

Co-requisite: Honors Biology

The focus of this class is on learning about the animals that inhabit the world's oceans through lecture, lab work, and projects. The principles of biology, chemistry and physics that govern the world's oceans are included so that students better understand marine animals. One of the main activities of this course is the setup and maintenance of saltwater aquariums which allows students to put into practice the topics discussed in class.

HONORS ANATOMY AND PHYSIOLOGY

Prerequisites: Honors Chemistry or Honors Accelerated Chemistry and Biology

This course serves as an introductory course on the anatomical structures and physiological processes of the human body. The focus is on learning about several key body systems such as skeletal, muscular, nervous, respiratory and cardiovascular. While these body systems serve as the core material other anatomical topics and material are discussed based on the interest of the students. A variety of methods including direct instruction, labs, projects and discussions are incorporated as students learn about the human body.

HONORS SEMINAR: CONTEMPORARY ISSUES IN SCIENCE

Co-requisites: Honors Biology or Honors Accelerated Biology

This course is an asynchronous, fully on-line course that helps students gain an understanding and appreciation for scientific phenomena that are relevant to scientifically literate adults in the modern world. Students will use a robust structured on class-management system to interact with material and other students. The course will incorporate pre-recorded videos, online discussions, and research and writing assignments. Topics could include health, agriculture, biotechnology, climate, neuroscience, astrophysics, genetics, and energy.

SOCIAL STUDIES

HONORS WORLD HISTORY I

Prerequisite: None

World History I is a survey of the major developments in ancient history commencing with the establishment of river valley civilizations through the Middle Ages as they took place in Europe, Asia, Africa, and the Americas. World History I emphasizes the skills requisite for understanding the world we know today, such as creating and interpreting maps, analyzing primary source documents, writing historically, organizing time and materials, thinking critically, and researching effectively. The course introduces students to the fundamental elements of historical research through the production of short research assignments using both the Internet and traditional sources. The study of major world religions and philosophies (Christianity, Judaism, Islam, Hinduism, Buddhism, Daoism, and Confucianism) is included throughout the curriculum. Civilizations are studied through the lens of politics, ideas and technology, geography, society, economics, arts and literature, and religion.

HONORS ACCELERATED WORLD HISTORY I

Prerequisite: Course recommendation by 8th grade teachers.

Note: This course is intended for students with accomplished reading comprehension and established work ethic, in addition to an above-average interest in history.

This course will emphasize the same content as Honors World History I but will study the history of the ancient world through 1450 via the lens of primary sources. Students will develop and use the same skills, practices, and methods employed by historians: analyzing primary and secondary sources; developing historical arguments; making historical comparisons; and utilizing reasoning about contextualization, causation, and continuity and change over time. Assessments will focus on primary source analysis, stimulus-based critical thinking, and historical writing.

HONORS WORLD HISTORY II

Prerequisite: Honors World History I or Honors Accelerated World History I

The principal aim of this course is to provide students with an opportunity to master and demonstrate an overall knowledge of the basic chronology, major events, and trends in World History from the Renaissance to the present and foster a deeper understanding of the political, social, economic and intellectual forces in the world today through our study of modern history. A multidisciplinary approach, including economics, geography, religion, art, literature and philosophy, will be utilized to gain a broader insight into the cultural development of the world. Through the use of primary and secondary source materials, students will learn to read with discrimination, and to analyze, synthesize, and express ideas effectively and precisely. The course continues the emphasis on writing and critical thinking stressed in World History I. Research, argumentative, and contextualization skills are developed through the completion of three trimester writing projects. Students also discuss current events that coordinate with each unit to examine connections between past and current events.

ADVANCED TOPICS: WORLD HISTORY II

Prerequisite: Honors World History I or Honors Accelerated World History I

This advanced course continues the emphasis on primary source analysis as a lens for the study of history found in Honors Accelerated World History I. Students investigate the content of world history for significant events, individuals, developments, and processes from 1450 CE to the present. Students will develop and use the same thinking skills and methods employed by historians: analyzing primary and secondary sources; developing historical arguments; making historical comparisons; and utilizing reasoning about contextualization, causation, and continuity and change over time. Assessments will focus on primary source analysis, stimulus-based critical thinking, and historical writing. Students will also complete a Signature Learning Experience (SLE), our Colloquium, a research project based on a current event, culminating in a policy proposal which they will defend in a presentation.

Students enrolled in this course may - but are not required to - sit for the Advanced Placement (AP) World History: Modern exam.

HONORS UNITED STATES HISTORY

Prerequisite: Honors World History II, Advanced Topics: World History II or equivalent

In US History Honors, students will examine the exciting history and story of the American nation. It is a dynamic and interactive class where students learn about the people, places, and events that have shaped America's distinctive place in a global society today. This course helps students to learn to think critically and creatively while assisting students as they work to improve and hone their writing, research, and analytical skills.

The class examines the development and evolution of the concepts of equality, liberty, democracy, rights, and opportunity in American society. A thematic and chronological approach weaves together these themes and ideals in order to provide students with a better understanding of the United States today. Students devote considerable time to the study of how these themes and ideals shaped the nation's political, economic and social systems as well as the United States' interactions with the rest of the world in war and peace.

Throughout the course students are challenged to examine their preconceptions and prejudices about the history of the nation. This course begins with America pre-colonization and will culminate with modern US History, examining how each major moment shapes our country today. Throughout the year, we will constantly weave in current events to our classes so students can see how history is being made each and every day. This adventure in history allows students to discover how the past has shaped the present, leading students ultimately to analyze America's place in a global world today. The course culminates with a series of discussions about modern issues including the War on Terror, Immigration, the Economic Collapse and other pressing issues.

ADVANCED TOPICS: UNITED STATES HISTORY

Prerequisite: Honors World History II, Accelerated World History II, or equivalent

Advanced Topics: United States History prepares students to study history in college. The course hones students' analytical skills, helping them understand and evaluate US History from its most minute measures of experience to its most complex concepts. Throughout the course, students will continue to develop the historical thinking, research, and processing skills necessary to arrive at conclusions based upon informed judgments and to present reasons and evidence clearly and persuasively in varied historical writing formats.

The content of this course begins with three review units spanning from the initial European incursions into North America through the Civil War. The in-depth coverage of course content begins with the Gilded Age, and this chronology investigates various themes in US History, including diversity, culture, demographic change, economic transformation, the impact of American society on its environment, globalization, politics, reform, religion,

the legacy of slavery, war and diplomacy, and the evolution of the American Identity. Various activities, from analyzing documents and experiencing simulations to leading class discussions, allow students to demonstrate the skills of an historian while uncovering the complexity of the enduring change that is American history.

Students begin their reading assignments over the summer. Emphasis is placed on critical thinking, historical writing and research, interpretation of original documents, and analysis of scholarly writings. Lectures, discussions, and activities – in addition to the nightly readings from the text and documents – serve as guides through the major political and social developments in the United States. Students will complete nightly assignments in order to be prepared to engage in the in-depth classroom analyses and activities. The course will culminate with a signature learning experience, such as a symposium, that invites students to demonstrate their learning.

Students enrolled in this course may – but are not required to – sit for the Advanced Placement (AP) United States History exam at the end of the year.

SOCIAL STUDIES ELECTIVES

Note: Social Studies elective courses do not fulfill Social Studies credits required for graduation.

HONORS ECONOMICS, LAW AND POLITICS IN AMERICA (ELP)

Prerequisite or Co-requisite: Honors US History or Advanced Topics: U.S. History or equivalent

In the current landscape of world events, “infotainment,” and fast-paced news cycles, it is easy to become apathetic to democratic practices or confused by biased media. Economics, Law and Politics (ELP) is an engaging and practical course designed to combat apathy and to promote civic competence and understanding. An emphasis will be placed on real-world applications and personal participation. Through simulations, class discussions, current events, field trips and hands-on, engaging class activities, students will investigate the American political and legal systems while exploring some economic thinking skills and concepts that inform those systems. An emphasis will be placed on students understanding both their rights and responsibilities within each system.

ELP will prepare students to identify, understand, and work to solve the problems facing our diverse nation in an increasingly interdependent and globalized world. Through the development of skills such as media literacy, decision-making and analysis, public speaking and debate, and the development of critical thinking, evaluation, and synthesis, students will examine real-world scenarios, case studies and current events in order to discover their own political beliefs and understandings.

HONORS PSYCHOLOGY

PREREQUISITE: Open to juniors and seniors only.

How does my brain work? Can more sleep improve my memory and well-being? Why is it so hard to put my phone down or stop binge watching on Netflix? How does my unconscious play a part in my decision making? What is the science of happiness? These questions and many more are explored in Honors Psychology. The course explores the basic elements of psychological science and dives directly into content that applies to students' everyday lives. This student and project centered course will give students the ability to learn more about human behavior and mental processes that is practical and allows students to better understand themselves and the world around them. Students will do hands on activities, meet with guest speakers, conduct research and experiments, learn how to navigate media, listen to podcasts, read from various texts and articles, and analyze human behavior through film. Major topics that will be covered include biological processes, consciousness, memory, personality, psychological disorders, and health and well-being with student interest at the heart of each unit. The ultimate goal of this course is to allow students to learn more about psychological science in order to think stronger and live longer.

ADVANCED PLACEMENT PSYCHOLOGY

PREREQUISITE: Open to seniors only.

AP Psychology is an introductory survey course that provides students with a working knowledge of psychological science and the major research studies that have changed much of what we know about human behavior and thinking over the last two centuries. This course is designed to help students learn how to work with college level material and dig deeper into their own metacognitive behaviors and strategies. Students will learn a broad range of content from research methods, biological bases of behavior, cognition, development, clinical and social psychology. The content is meant to mimic an introductory college course experience that many college students may be required to take for general courses early in their college experience. AP Psychology is designed for students who are curious about these topics and ready to take on the pace and rigor this course requires. In addition to learning the basic content, students take part in major projects that emphasize various aspects of wellness and wellbeing each trimester. The breadth of information covered in this course is useful for a variety of academic courses for both high school and college but also for life. Students are able to reflect on who they are individually and how the world functions around them. Finally, the course is based on AP College Board curriculum in which students are able to sit for the AP exam in May.

ADVANCED TOPICS: UNITED STATES GOVERNMENT / POLITICS

Prerequisite: Honors US History or Advanced Topics: U.S. History or equivalent

The Advanced Topics course in US Government and Politics provides students with an analytical perspective on government and politics in the United States.

This course includes both the study of general concepts used to interpret US politics and the analysis of specific examples. The course begins with a fast-paced introduction to the various institutions, groups, beliefs, and ideas that constitute US politics. Students are then acquainted with a variety of theoretical perspectives and explanations for various behaviors and outcomes. Topics covered in the course include the constitutional underpinnings of the United States government, political beliefs and behaviors, political parties, interest groups and mass media, institutions of national government, public policy, and civil rights and liberties. The course is taught at the college level, using college textbooks and other primary sources.

WORLD LANGUAGES

HONORS SPANISH I: NOVICE

Prerequisite: None

In the Novice/Novice A range Level, students learn to communicate, comprehend, and present, in oral and written form, on very familiar topics, using isolated words and high-frequency phrases in the context of culture, connections, and comparisons. Assessments are proficiency-based. Students are assessed on the communication standard in three modes: interpretive (reading, listening), interpersonal (spontaneous listening/speaking or reading/writing), and presentational (formal speaking/writing). When applicable, culture, connections, and comparisons are embedded in assessments of the communication standard. This course is taught with the goal of 90% target language use in the classroom.

HONORS SPANISH II: INTERMEDIATE LOW

Prerequisite: Honors Spanish I

In the Novice B/Intermediate Low range level, students learn to communicate, comprehend, and present, in oral and written form, in a variety of very familiar and predictable topics using isolated words, learned phrases and learned grammatical structures in the context of Culture, Connections, and Comparisons. Assessments are Proficiency-based. Students are assessed on the Communication standard in three modes: interpretive (reading, listening), interpersonal (spontaneous listening/speaking or reading/writing), and presentational (formal speaking and writing). This course is taught with the goal of 90% target language use in the classroom.

HONORS SPANISH III: INTERMEDIATE MID A

Prerequisite: Honors Spanish II

In the Intermediate Mid A/Intermediate A range level, students learn, in oral and written form, to participate in exchanges, and present on a variety of topics using familiar vocabulary and learned grammatical structures in the context of culture, connections, and comparisons. Assessments are Proficiency-based. Students are assessed on the Communication standard in three modes: interpretive (reading, listening), interpersonal (spontaneous listening/speaking or reading/writing), and presentational (formal speaking and writing). This course is taught with the goal of 90% target language use in the classroom.

This course counts towards the Global Education certificate.

HONORS SPANISH IV: INTERMEDIATE MID B

Prerequisite: Honors Spanish III

In the Intermediate Mid B/Intermediate B range level, students refine and enhance their language skills and cultural knowledge acquired in prior courses. Students work through a self-paced classroom model to demonstrate full mastery of these concepts in the context of interpersonal (spontaneous listening/speaking), interpretive (reading/listening), and presentational (speaking/writing) tasks. Additionally, students will be challenged to produce more detailed language using various time frames and richer vocabulary. All assessments are proficiency-based, requiring learners to think critically in real-life scenarios.

This course is taught with the goal of 90% target language use in the classroom, and counts toward the Global Education certificate.

HONORS SPANISH V: INTERMEDIATE HIGH

Prerequisite: Honors Spanish IV

In Spanish V, students put their Spanish language knowledge into action and strengthen their oral fluency by engaging in thought-provoking conversations with Spanish-speaking members of our community. Students will become more proficient in discussing current events, cultural issues, and youth interests as they will develop collaborative projects at non-profit organizations and other educational institutions.

During the Spring, students put into practice their analytical writing skills by working on essays where they discuss some problems of their communities and offer their recommendations and possible solutions.

This course is taught in Spanish and it counts towards the Global Education certificate.

ADVANCED PLACEMENT SPANISH LANGUAGE: ADVANCED

Prerequisite: Honors Spanish IV

AP Spanish Language is intended for students who have an interest in Hispanic culture and who wish to develop proficiency and integrate their language skills using authentic materials and sources. Students should already have attained a reasonable proficiency in speaking, reading, and writing the language. AP Spanish will help prepare students to demonstrate their level of Spanish proficiency across three communicative modes: interpersonal, interpretive, and presentational. A successful student will also be motivated and be able to work well both collaboratively and independently. The course is comparable to a 4th semester college course that focuses on speaking and writing in the target language at an advanced level.

HONORS FRENCH I: NOVICE

Prerequisite: None

Students in French I work on acquiring vocabulary and skills to start communicating in French. They are presented with scenarios that allow them to perform simple communicative tasks such as making requests in class, greeting someone, asking for and giving personal information, describing someone's personality, talking about their classes and talking about their daily activities. Our focus performance wise is centered on interpersonal communication –talking to someone one on one- and on interpretive communication –listening to someone and responding/reacting according to what is understood. In addition, the course introduces the major countries of the French-speaking world, the major cities and geographical regions of France, areas in the United States influenced by French language and culture, and the ways of French life. The course is conducted mainly in French, but English is used when clarification is required.

HONORS FRENCH II: INTERMEDIATE LOW

Prerequisite: Honors French I

Students in French II work on building upon the language skills developed in French I. Topics are presented in different scenarios that allow students to communicate in French while keeping their focus on advancing their performance at the interpersonal, interpretive and presentational levels. Students work on activities such as talking about daily activities and routines, describing what they did at a specific time in the past and talking about their plans for the future. Although we work on all three modes of communication mentioned above, we focus a lot of our time and attention on the interpersonal level –speaking to someone one on one- and the interpretive level –listening to someone and answering/reacting based on what is understood. Students continue to work on building their confidence to use the language in different situations. In addition, the course introduces cultures, traditions and current events of the francophone world. The course is conducted mainly in French, but English is used when clarification is required.

HONORS FRENCH III: INTERMEDIATE MID A

Prerequisite: Honors French II

Students in French III work to master the vocabulary and grammatical structures they encountered in French II. They continue the study of verb tenses, such as the future and the conditional, and develop their understanding of the subjunctive mood as they advance through the *D'Accord 2* textbook. Following that book, the cultural focus is on contemporary French history and French art, particularly Impressionism, post-Impressionism, and surrealism. The use of easy-reader novels complements the reading activities. Cultural study includes outstanding French films. The class is conducted in French.

HONORS FRENCH IV: INTERMEDIATE MID B

Prerequisite: Honors French III

Students begin a journey of exploration starting with several short readings from French and Francophone authors. Students learn vocabulary represented in those readings as well as useful for discussing and dialoguing about material. We explore art, fables, film scripts, poetry and plays. They will continue their learning of advanced grammar and vocabulary through the *D'Accord 3* textbook. The class is conducted in French.

HONORS FRENCH V: INTERMEDIATE HIGH

Prerequisite: Honors French IV

This course is an intensive language class that prepares students for advanced language communication skills. It is designed for students who wish to develop all four language skills: listening, speaking, reading, and writing. Equivalent to a fourth semester college course, it includes aural and oral skills, reading comprehension, grammar, and written or visual projects. Emphasis is placed on active communication, acquisition of vocabulary, development of expository passages, and ability to express ideas orally and in written form. Field trips, lectures, magazines, films, and educational activities are part of the course instruction. The textbooks are *Thèmes* and *AP French Worktext*.

ADVANCED PLACEMENT FRENCH LANGUAGE: ADVANCED

Prerequisite: Honors French IV

This course is an intensive language class that prepares students for the Advanced Placement French language examination in the spring. It is designed for students who wish to develop all four language skills: listening, speaking, reading, and writing. The course is comparable to a 4th semester college course that focuses on speaking and writing in the target language at an advanced level. French AP emphasizes active communication, acquisition of vocabulary, and the development of expository passages. Field trips, lectures, magazines, films, and educational activities are part of the course instruction. The textbooks are *Thèmes* and *AP French Worktext*.

HONORS CHINESE I: NOVICE LOW

Prerequisite: None

Chinese I is an introductory course in Mandarin Chinese, a tonal language. The goal of this course is to help students gain functional communication in speaking, writing, reading, and listening. The curriculum is designed to assist students in gaining social and cultural knowledge of the Chinese language and contemporary China. *Chinese I* will cover numerous themes that are related to useful real-life Chinese language such as: greetings, family, date & time, hobbies, etc. Students will develop various strategies and study habits to strengthen speaking and writing skills. Pinyin (Chinese Romanization) and Chinese characters are taught. Students learn to communicate about daily life and other topics of interest.

HONORS CHINESE II: NOVICE MID

Prerequisite: Honors Chinese I

Chinese Level II is designed for students who have a fundamental foundation of the target language. Students will be taught the skills to discern language patterns and forms. As time progresses, students are expected to start to understand the intricacies of the language and to be creative with it. From this knowledge, students can create complete sentences or clusters of sentences and carry on short spontaneous conversations. To improve comprehension skills, the teacher will speak Chinese as much as possible to students during class.

HONORS CHINESE III: NOVICE HIGH

Prerequisite: Honors Chinese II

In Chinese III, students are expected to learn additional characters (words and vocabulary), their pronunciations, meanings, ways of writing them and more importantly, the compound usages of these words. Students will expand their ability to write Chinese. In Chinese III the emphasis will be given to verbal usages of the language and the relevant topics that students have expressed an interest in, such as styles of living in China, the weather, seasons, food, color, clothing, friends and useful communication and dialogue (making phone calls and directions) that take place in daily life. Most of the language used by the teacher in presentations and speaking to students will be in Chinese to improve comprehension and speaking skills. By the end of Level III, students are expected to be functionally fluent enough to handle almost all typical situations in dealing with everyday tasks and some abstract topics. Level III also focuses on polishing students' accuracy and fluency in pronunciation. In both speech and writing, students are expected to produce clusters of sentences and even short paragraphs. Level III students are tasked with the goal of circumlocution such that when they may not know a particular word, they are expected to talk around it to allow the listener to achieve a general understanding of the overall content.

HONORS CHINESE IV: INTERMEDIATE LOW

Prerequisite: Honors Chinese III

In Chinese IV, students build upon their Chinese foundation and learn more complex language structures. Students will become more proficient in discussing current events, short stories, and cultural differences. Chinese IV emphasizes the use of linking words and phrases in order to coherently express a series of campus themes that relate to students' school or home life in the Chinese language. Assessment will be based upon student achievement in reading, writing, speaking, and listening comprehension. The class will be conducted in the target language where the teacher will speak almost entirely in Chinese to the students during class. Level IV is designed to prepare students for the upcoming AP language class by giving them AP-like tasks and teaching strategies to succeed with those tasks. Students are expected to continue to increase their fluency in handling everyday tasks and in many abstract topics.

HONORS CHINESE V: INTERMEDIATE MID

Prerequisite: Honors Chinese IV

In Chinese V, students will become more proficient in discussing current events, short stories, and cultural differences. Chinese V provides an opportunity for the student to acquire better speaking skills in Chinese with the emphasis on natural, colloquial usage. New vocabulary and idiomatic phrases will be emphasized so that the student can hold more detailed conversations in Mandarin during each class. Level V students will review grammar and key sentence patterns of Chinese and develop complete sentence structure, provide practice in the appropriate use of idiomatic expressions, and further develop skills in reading and writing Hanzi (Chinese characters) and essay writing. The course will also build vocabulary, expand reading comprehension, and encourage extensive conversation in Chinese. It will cover additional aspects about Chinese culture, history and geography.

ADVANCED PLACEMENT CHINESE LANGUAGE AND CULTURE: ADVANCED

Prerequisite: Honors Chinese IV

The AP Chinese Language and Culture course is designed to be comparable to fourth semester (or equivalent) college/university courses in Mandarin Chinese. This college level course deepens students' immersion into the language and culture of the Chinese-speaking world and typically represents the point at which students complete approximately 250 hours of college-level classroom instruction. Coursework provides students with opportunities to perform Intermediate- to Advanced-level tasks, and students are expected to achieve proficiencies throughout, and sometimes beyond, the Intermediate range, as described in the American Council on the Teaching of Foreign Languages (ACTFL) *Proficiency Guidelines*.

The AP course prepares students to demonstrate their level of Chinese proficiency across the three communicative modes (Interpersonal,

Interpretive, and Presentational) and the five goal areas (Communication, Cultures, Connections, Comparisons, and Communities). Its aim is to provide students with ongoing and varied opportunities to further develop their proficiencies across the full range of language skills within a cultural frame of reference reflective of the richness of Chinese language and culture. AP Chinese Language and Culture teachers plan and implement a course that focuses on language proficiency while interweaving level- and age appropriate cultural content throughout the course and providing for frequent formative assessment of students' developing proficiencies within the context of their learning. Instructional materials and activities are carefully and strategically adapted from authentic sources to support the linguistic and cultural goals of the course.

GENERAL ELECTIVES

Note: Electives in this category do not fall under the umbrella of one department and are therefore not listed under a specific department. general electives may be taught by faculty from a different department from year to year

HONORS CODING & COMPUTER SCIENCE

Prerequisite: None

Surrounded as we are by computing devices, and faced with an exciting future of artificial intelligence, automation, and the potential for robotic applications in virtually all aspects of industry, it's critical for students to not only be good users of technology, but to also have an excellent command of its potential. The course will introduce learners to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet, cybersecurity concerns, and computing impacts. Learners will develop computational thinking skills vital for success across all disciplines, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize, and draw conclusions from trends. The course engages learners in the creative aspects of the field by allowing them to develop computational artifacts based on their interests. Students will explore the JavaScript and Python programming languages, as well as HTML and CSS web design.

Upon completion of the course, students will be able to demonstrate intermediate competency in:

- Variables and Data Structures
- Computational Thinking, including Decomposition, Logic, Patterns, Abstraction, Algorithms
- Core Programming concepts such as Sequencing, Loops, Conditionals, Functions, Variables and Parameters
- Documentation and testing
- Applications of computer science

Additionally, students will have a portfolio of works, including multiple programs, apps, and/or websites that demonstrate these skills.

ADVANCED TOPICS: CODING & COMPUTER SCIENCE

Prerequisite: Honors Coding & Computer Science or recommendation of teacher based on a work portfolio and written entrance exam

Advanced Topics: Coding & Computer Science will build upon coding and computer science foundations, and allow students to explore a deeper dive into coding and computer science topics such as 3D game and simulation design, front- and back-end web development, and mobile app creation. Students will develop several projects reflective of their interests which may include, but are not limited to, a mobile application; a standalone 2D or 3D game; an interactive Virtual Reality experience; or a published website that features elements representative of current day web development practices and techniques. Students will publish their products to be experienced by others in the class, the school, and the world. Students will be presented with a series of coding challenges in a variety of programming languages. Their general coding techniques (e.g. troubleshooting and debugging, searching out existing resources for answers, and finding resources for self-development and expansion of existing knowledge) will be the primary focus of assessment, followed by application of appropriate syntax, best practices, and design choice. Students will provide and receive feedback from each other, as well as from the instructor. Skill assessments will take place on a weekly basis, with milestone skill check-ins being submitted by students as they complete projects within a flexible timeline.

The content, coding languages, and complexity of the final curriculum will be developed with input and feedback from instructors from colleges and other independent schools.

Upon completion of the course, students will be able to demonstrate advanced competency in:

- Variables, Data Structures, and Object-Oriented Programming techniques
- Computational Thinking and • Core Programming concepts
- Documentation and testing
- Applications of coding and computer science

Additionally, students will have a portfolio of works, including multiple programs, apps, and/or websites that demonstrate these skills

GLOBAL EDUCATION

Prerequisite: Open to seniors only. This course does not fulfill the World Language requirement. This course is required for completion of the Global Education Certificate.

During the first trimester, the Global Education course would engage students in conversations around the following questions: What is global education? What constitutes a global issue? What are the components of global education? What is the PISA?

Secondly, students will learn about several important global issues around the world in areas such as education, pollution, war and peace, gender roles, poverty, water, immigration etc. Students will review, create, and present case-studies in these and other areas.

Thirdly, students will learn world geography and its impact on global issues.

During the second trimester, students will work on their Capstone with a particular focus on a global issue. They compose their Capstone essay in consultation with the teacher.

During the third semester, students will present their Capstone prior to the Cannon capstone presentation day. Throughout the course, students will watch, discuss, and analyze global education documentaries and films.

PHYSICAL EDUCATION

WELLNESS AND LONG-TERM ATHLETIC DEVELOPMENT

Prerequisite: None. Open to juniors and seniors only.

This course takes a holistic approach to student wellness and long-term athletic development, which serves the mission of Cannon School and its Athletics Department. The curriculum is informed by scientific principles of kinesiology, exercise physiology and biomechanics. This course teaches basic strength and power development, speed development, pre-habilitation exercises, flexibility and mobility techniques along with mental toughness training, performance nutrition, character and leadership development and emotional wellness. Students will progress through the program based on their individual strength and technical levels. If a student has a physical limitation, an alternative program will be given to enable the student to participate safely in the class. If a student is an athlete of an "in season" sport they will have an in season modification made to their training program, along with specific "Game Day" modifications. We will go over program design so when students leave Cannon they have the knowledge to continue to live a healthy lifestyle for the rest of their lives.

SENIOR COLLOQUIUM: LEADERSHIP

Prerequisite: Open to Seniors only. Application required with approval of the instructor.

This course offers students leadership training for school and beyond. Students who take this course should have a passion for leadership. Students will read and respond to a range of leadership literature, navigate their own leadership challenges with help from the instructor, and collaborate to chart the curriculum. Seniors who are interested in taking this seminar course must apply and receive permission from the instructor

SENIOR PRACTICUM: EDUCATION

Prerequisite: Open to Seniors only. Application required with approval of the instructor.

This course is designed for students who have a passion and interest in pursuing a degree in education. Students will read and respond to a range of educational literature, observe and assist in classrooms and collaborate to chart the curriculum. Seniors who are interested in taking this seminar course must apply and receive permission from the instructor.

YOGA

Prerequisite: None. Open to seniors only.

Yoga is a class of self-discovery for students through the: Physical practice of yoga (asanas/poses), Self-inquiry work of readings (2-3 books) and discussions and Contemplative work of meditation and journaling. Students will explore the origins and applications of yoga in daily life such as learning to find balance and quiet in a busy world and self-care tools that will serve them throughout life. This course is an immersion requiring a physical and intellectual commitment to growth.



CANNON SCHOOL