



2026-2027

UPPER SCHOOL COURSE CATALOG

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SPRINGSIDE CHESTNUT HILL ACADEMY

ACADEMIC GRADUATION REQUIREMENTS

Four-year academic graduation requirements:

20 Credits (one full-year course = 1 credit; one-semester course = ½ credit)

- English ……..4 years
- Math……..4 years
- Language……...3 levels of a foreign language
- Science……...3 years (Physics, Chemistry, and Biology)
- History……3 years
- Arts……4 semesters, two of which are in 9th grade
- Center for Entrepreneurial Leadership Seminars……..9th grade
- Center for Entrepreneurial Leadership Capstone……..10th grade
- Health and Wellness……1 semester required, 9th grade
- Senior Projects: During the month of May, seniors must participate and complete approved projects of their choices away from the school campus
- Athletics: 9th, 10th, 11th grades—2 athletic requirements/year; 12th grade—1 athletic requirement/year

Please Note

- In order to earn a Springside Chestnut Hill Academy diploma, students must earn a minimum of 20 core credits.

- Students must take a minimum of **five credits each year** in the disciplines of English, math, language, science, history, or engineering, or other designated courses, and students must carry a minimum of five courses from these disciplines each semester. Arts courses do not count toward the minimum five courses.
- A student earns one-half academic credit upon the successful completion of one semester of work and a full credit upon completion of each full-year course.
- All electives vary year to year based on faculty availability and student sign-ups.

EXPLANATION OF COURSE DESIGNATIONS

All courses offered in the Upper School at Springside Chestnut Hill Academy are college preparatory courses. Because this is the standard, no special designation is placed next to the course title. In most departments, a few courses are marked "Honors." These courses require proven facility in the discipline as well as the student's willingness to do more work at a more demanding level than in the usual college preparatory course. Many Honors courses lead to the Advanced Placement Program in the 11th and 12th grades. Students take Honors courses only with the permission of the department concerned. Advanced Placement (AP) courses are offered in English, history, language, math, and science. To take Honors and AP courses, students must meet published criteria as well as receive departmental approval. These are our most demanding courses, covering at least a semester of college-level work. Students must be independent learners with proven facility in the discipline and willing to undertake substantial academic responsibility. AP courses culminate in the College Board's Advanced Placement testing program, and students who do well on these tests may earn the equivalent of a college credit. Admission to an AP course is dependent upon the permission of the department.

COURSE OFFERINGS: THE ARTS AND NEW MEDIA

Department Chair: Megan Monaghan (mmonaghan@sch.org)

Arts Mission Statement

The Arts Department at Springside Chestnut Hill Academy uniquely challenges our students to think creatively and critically. As an essential part of the school day and through the use of creative tools in the classroom, the arts empower students to discover their individual and collective voices and be active makers of their own media. The arts curriculum provides diverse opportunities for students to invent and practice the artistic process while also developing their expressive voices through engagement with the works of others. Students advance their skills while cultivating an appreciation for the rich legacy of artistic expression throughout the world.

The Arts Department at Springside Chestnut Hill Academy offers a wealth of electives in the Upper School. Through their two-year arts requirement, students can either explore a broad range of media or pursue a highly specialized four-year progression. This pathway enables them to refine their artistic skills and cultivate their unique artistic identity, following a scaffolded curriculum that culminates in the creation of a personalized portfolio for continued collegiate study.

In music, students may begin by taking an ensemble and then work toward Honors-level work and pursue leadership positions in Honors Orchestra, Honors Chamber Ensemble, Honors Jazz Ensemble, or Chamber Singers. In addition, students interested in music composition and music production may begin study in the Songwriting course and take additional semesters that result in individualized instruction. In Visual Arts, students may take a variety of classes or progress to portfolio-building classes in Woodworking, Photography, Drawing and Painting, or Ceramics in their junior and senior years. In New Media, students may choose from progressions in Video Production, Digital Art, Fashion Innovation, Creative Technology, and CAD/CAM (cross listed with Engineering).

9th Grade Arts Options

Ninth-grade students have the opportunity to choose between many options to fulfill their yearlong arts credit. They may choose between a year in Upper School Orchestra (and opt to audition for membership in the Honors Chamber Ensemble or Honors Jazz Ensemble), or Chorus, or they may choose to select two classes from the list below. *Students should be aware that many more arts electives are available to them throughout their Upper School years.*

(Descriptions below in each Arts Category.)

Orchestra (Jazz and Chamber Ensemble by audition) (FULL YEAR CLASS)

Vocal Workshop (FULL and SEMESTER options)

Introduction to Drawing and Painting

Introduction to Sculpture and Ceramics

Introduction to Digital Photography and PhotoShop

Introduction to Woodworking

Introduction to Video Production

Introduction to Songwriting

Theatre Production (Acting or Technical Theatre)

9th - 12th Grade Music Options

9th-12th Vocal Workshop/Concert Choir

Grades 9-12; semester or full-year course; ½ /1 credit, meets 4 times per 7 day cycle

9th-12th Concert Choir offers a dynamic blend of individual vocal development and ensemble performance to students in 9th-12th grade. Students will refine key vocal techniques such as breath control, posture, diction, and tone production while working to expand their vocal range. Students will hone their ensemble skills from blending voices with this SATB Choir to perfecting stage presence. As they prepare for performances, students will explore a diverse repertoire spanning from pop a cappella and show tunes to folk and classical selections, providing a rich, varied choral experience.

Honors Chamber Singers (Hilltones and Laurelei)

Grades 10–12; full-year course; 1 credit, meets 5 times per 7 day cycle

***Prerequisites:** One semester of an Upper School Performance Ensemble is required to audition for admittance to this course. Annual auditions are required each year to remain enrolled in the ensemble.

Chamber Singers is a select choir for highly able and motivated vocal musicians committed to a rich and demanding choral experience. Students receive instruction in choral and vocal technique and learn to build choral discipline while preparing repertoire for three concerts. As a divisi ensemble, Chamber Singers embraces an ensemble for tenors/basses (Hilltones) and an ensemble for treble voices (Laurelei).

Orchestra

Grades 9–12; full-year course; 1 credit, meets 4 times per 7 day cycle

Prerequisites: Private study or previous steady membership in the Middle School Instrumental Program.

Instrumentalists have the opportunity to play together in an orchestral setting and also participate in a small ensemble experience. Students will play together in the full orchestra and then will have the ability to audition for either the Jazz Ensemble or Chamber Ensemble for Honors credit. Through this instrumental study, students will develop discipline in sight reading, technique, interpretation, and musical independence. Students learn to build a cohesive ensemble while preparing repertoire for two major performances. Evaluations, both written and performance-based, are a cornerstone of the grading process for the ensembles. The Orchestra, Jazz Ensemble, and Chamber Ensemble take a performance tour together every three years. Members of the rhythm section (guitar, bass, piano, drum set) will be accepted after an audition process.

Honors Chamber Strings

Grades 9–12; full-year course in conjunction with Orchestra; 1 credit

Prerequisites: To participate in this honors-level ensemble, students must be concurrently enrolled in Upper School Orchestra, meet the published playing criteria, and receive departmental approval.

Honors Chamber Strings offers motivated and highly skilled string players the opportunity to perform in a small, conductorless ensemble that emphasizes the artistry and collaboration of chamber music. Students will perform music from varied time periods and cultural traditions, working through a high volume of repertoire across the year, including shorter works, multi-movement pieces, and a wide range of composers.

This advanced, ambassadorial ensemble performs outside of the regular Arts calendar at outreach events, community programs, festivals, and competitions. In addition, students participate in recording projects that provide valuable artistic experience and are often used for auditions, competitions, and archival purposes.

Honors Jazz Ensemble

Grades 9–12; full-year course in conjunction with Orchestra; 1 credit

Prerequisites: To participate in this honors-level ensemble, students must be concurrently enrolled in Upper School Orchestra, meet the published playing criteria, and receive departmental approval.

Membership in the Honors Jazz Ensemble provides motivated instrumentalists with the opportunity to explore and perform a wide range of jazz and jazz-influenced styles. Students will develop improvisation skills and deepen their knowledge of jazz theory while cultivating the performance practices that define jazz. This advanced, ambassadorial ensemble prepares a high volume of repertoire across the year, focusing on swing, Latin, funk, ballads, and other jazz charts. Improvisation is integral, with emphasis on both ensemble performance and individual expression.

Students in the Honors Jazz Ensemble frequently participate in performances beyond the regular Arts calendar, including outreach events, community programs, festivals, and competitions. Recording projects serve as culminating assessments and are often used for auditions, competitions, and archival purposes.

Introduction to Songwriting and Music Production

Grade 9; fall/spring semester; ½ credit, meets 3 times per 7 day cycle

Songwriting and Music Production takes the student through the complete songwriting process, from constructing a song to producing a final mix of the song. Students will become familiar with song form and lyric schemes, and become more thoughtful and appreciative listeners. In addition, class assignments will enhance knowledge of simple scales, chords, and rhythms, which will further inform composition work. This class meets in the Vidcast and Jamie Bell Recording Studios to utilize the latest in music software and recording equipment.

Songwriting and Music Production 1

Grades 10–12; spring semester; ½ credit, meets 4 times per 7 day cycle

Songwriting and Music Production 1 is a more advanced class that builds on the creative and technical skills developed in Intro to Songwriting. In this course, students take the next step by creating fully featured songs designed for streaming and sharing. They'll explore more advanced chord structures, learn new production techniques in our Jaime Bell Recording Studio, and develop a producer's ear that helps them identify and recreate the musical elements they admire in other artists' work. This class is also highly collaborative: students track with live musicians, write lyrics with co-writers, and experience the give-and-take of making music in a real studio environment. It's a course for anyone excited about someday contributing to an album, symphony, or film. The class is capped at 16 participants.

Songwriting and Music Production 2, 3, and Portfolio

Grades 11, 12; spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Completion of Songwriting and Music Production 1 (for Level 2) and 2 (for Level 3) and 3 (for Portfolio).

Songwriting 2, 3, and Songwriting Portfolio function as an advanced, independent-study style course where students take full ownership of their creative work. The semester centers on developing a major musical project, whether that's a fully produced album, a symphony, a film score, or another ambitious artistic goal. Students refine their artistic identity, deepen their understanding of the music industry, and learn to articulate what makes their work distinctive. They manage their own production workflow, collaborate with musicians and co-writers as needed, and receive ongoing mentorship and studio support. This class is designed for serious young artists who want focused time and guidance to bring a substantial musical vision to life.

Private Instrumental Lessons

Grades 9–12; full-year course; 0 credit

SCH Academy offers private instrumental instruction in all instrumental media and voice with superb performing artists and educators. Private instruction is provided after school and, in certain cases, during school hours. This service is offered for an additional fee above the cost of tuition and is not applicable for music course credit or the graduation requirement in music. See the link in the "Key Parent Resources" tile in mySCH for more information.

9th - 12th Grade Visual Arts Options

Introduction to Sculpture and Ceramics

Grade 9; fall/spring semester; ½ credit, meets 3 times per 7 day cycle

This course is designed to provide a beginning experience in sculpture and wheel throwing (ceramics). Students will explore a variety of mediums including papier-mâché, clay, cardboard, and mixed media. We will also look at contemporary art from various perspectives. Emphasis will be on learning to build using basic design elements,

function, aesthetics, creativity, and craftsmanship. Students will gain an understanding of essential vocabulary, and a playful approach to creating.

Ceramics 1

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

This course introduces students to the aesthetic, concept, and design of ceramics. We will investigate tactility and the process of realizing form. Students produce work through the effective use of the potter's wheel, casting, jiggering, and/or hand building. This course introduces students to historic and contemporary ceramics, firing techniques, and glaze application.

Ceramics 2 & 3

Grade 10; spring semester; ½ credit, meets 4 times per 7 day cycle
Grades 11, 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Ceramics 1 (for Level 2) and 2 (for Level 3)

This course is designed to encourage more advanced research and individual focus in ceramics. Advanced handbuilding or wheel throwing techniques will be explored. Simple and complex mold making will also be covered. In-depth analysis of historical and contemporary ceramics helps direct students through their own personal exploration in clay. More advanced glazing methods and the discussion of glaze chemistry will be utilized in the production of student work.

Ceramics Portfolio

Grade 11; spring semester; ½ credit, meets 4 times per 7 day cycle
Grade 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: 1 Semester of Ceramics 1, 1 Semester of Ceramics 2 and 1 Semester of Ceramics 3

This course is designed for students who are considering Ceramics or Sculpture as a college major or for students who want to include a portfolio as a supplement to their college application. Students will create a body of work from a written thesis that generates a clear and focused portfolio. From there, the course will teach exhibition techniques and procedures for documenting the artwork. At the conclusion of the course, students will have a portfolio of 20 slides and an artist statement to complement their body of work.

Introduction to Drawing and Painting

Grade 9; fall/spring semester; ½ credit, meets 3 times per 7 day cycle

Introduction to Drawing and Painting explores the basics of drawing and painting. Students use a variety of media such as graphite, charcoal, brush, pastel, ink and acrylic paint to create projects focused on portraiture, typography, collage, graphic novels, and essential photoshop skills. Each project is designed to help students engage

foundational visual concepts such as composition, value, mark-making, color, concept, and perspective.

Drawing, Design, Painting 1

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

This class is geared towards students with a desire to strengthen their drawing and painting skills. Students work from photographic references and life observation to explore scale, proportion, line, perspective, composition, spatial relationships, color, value, and mark-making. Students will use pencil, charcoal, pen, brush and ink, scratchboard, pastels, acrylic, and oil paint. Two-dimensional design projects introduce students to more advanced color theory, layering techniques, and basic graphic design skills within photoshop. Instruction is geared towards the development of creative problem-solving, observational and conceptual skills, and personal voice.

Drawing, Design, Painting 2 & 3

Grade 10; spring semester; ½ credit, meets 4 times per 7 day cycle
Grades 11, 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Drawing, Design, Painting 1(for Level 2) and 2 (for Level 3)

This course will build upon the basic skills learned in Drawing, Design, Painting I. Students will explore style, aesthetics, drawing, and painting from different cultural frameworks. They will continue to build their skills and refine techniques from their observational work, while starting to explore concepts to inspire imaginative and symbolic art making. They will engage in integrating design principles with a focus on art evaluation and with an increasing discovery of artists and their work. Students will be encouraged to develop their own artistic voice within each project and learn to develop an artwork over a longer period of time. Each student is also asked to discover a range of working methods to include the change of scale in drawing or painting and investigate a range of different drawing and paint media. This level also provides time for each student to examine the process involved in making a piece of art, so that one idea may culminate in multiple sketches or a variation of pieces that make up a whole project.

Drawing Portfolio/AP

Grade 11; Portfolio: spring semester; ½ credit, meets 4 times per 7 day cycle, AP: full year, meets 4 times per 7 day cycle
Grade 12; Portfolio: fall/spring semester; ½ credit, meets 4 times per 7 day cycle, AP: full year, meets 4 times per 7 day cycle

Prerequisite: Two semesters of Drawing and Painting 2, or Woodworking 2

Students who wish to pursue their interest in 2D (Drawing, Painting, or Woodworking) art beyond level three may continue at the portfolio level and/or elect to take the AP Studio Art course and AP college board exam. This is an opportunity for students to design their own curriculum and delve more deeply into a specific area or work on developing a portfolio of their work for the college admission process. Each student will be assisted

in the process of selecting and documenting work for their college portfolio. Students may opt to take this course in both semesters.

Introduction to Woodworking

Grade 9; fall/spring semester; ½ credit, meets 3 times per 7 day cycle

This course will introduce students to the fundamentals of woodworking. Students will learn traditional joinery techniques and work primarily with hand tools.

Woodworking 1

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Students will become familiar with power tools and traditional joinery techniques, furniture designs, and various methods of applying finish. Historically important styles and craftsmen will be discussed as they relate to the students' projects. Each student will build a furniture or sculpture project of their own design. In the second half of the semester, students will also have the option to explore bowl-turning on the lathe and CNC fabrication. Students will learn to distinguish different species of wood by their color and grain and identify a variety of trees by their leaves.

Woodworking 2 & 3

Grade 10; spring semester; ½ credit, meets 4 times per 7 day cycle
Grades 11, 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Students must have completed the prior level(s)—Woodworking 1 for Woodworking 2, and Woodworking 1 and 2 for Woodworking 3—meet the published criteria, demonstrate proficiency with shop equipment, and receive departmental approval.

Advanced woodworking students will be challenged to design projects building and expanding on the skills they acquired in Woodworking 1. An emphasis will be placed on creative design, joinery, and developing a greater sensitivity to the unique qualities inherent in different species of wood. Students will have the opportunity to work more independently and can select project-work focused on lathe, CNC, furniture design, sculpture, or combinations thereof.

Woodworking Portfolio/AP

Grade 11; Portfolio: spring semester; ½ credit, meets 4 times per 7 day cycle, AP: full year, meets 4 times per 7 day cycle
Grade 12; Portfolio: fall/spring semester; ½ credit, meets 4 times per 7 day cycle, AP: full year, meets 4 times per 7 day cycle

Prerequisite: Students must have completed Woodworking 1, Woodworking 2, and Woodworking 3—meet the published criteria, demonstrate proficiency with shop equipment, and receive departmental approval.

Students who wish to pursue their interest in 3D Woodworking beyond level three may continue at the portfolio level, or elect to take the AP Studio Art course and AP College Board exam. This is an opportunity for students to delve more deeply into a specific area, design their artistic projects, and develop a personal portfolio for the college admission process. Each student will be guided in selecting and documenting work for their college portfolio. Students may opt to take this course in both semesters.

Digital Photography and Photoshop

Grade 9; fall/spring semester; ½ credit, meets 3 times per 7 day cycle

Digital Photography and Photoshop provides an introduction to digital photography, focusing on basic camera functions and key photography concepts using a DSLR camera. Through hands-on projects, students will learn photo editing techniques with Adobe Photoshop and Lightroom Classic. The course is designed to enhance visual literacy while offering a comprehensive understanding of both the technical and artistic aspects of photography. Students will explore landscape photography, and graphic design principles while developing their unique artistic vision. Additionally, students will engage in peer critiques, fostering confidence in discussing and refining their work.

Photography 1

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Photography 1 is designed for students who are ready to deepen their understanding of photographic theory while advancing their technical and creative skills. Using DSLR cameras, students will explore manual settings, lighting, composition, and digital workflow, with an emphasis on photography as a tool for storytelling and cultural expression.

Course units include Photojournalism, Personal Storytelling, Landscape and Environmental Photography, Still Life, Color and Composition, and Experimental Photography. Students will refine their artistic voice, strengthen visual literacy through peer critiques, and gain inspiration from the work of both historical and contemporary photographers.

Photography 2 & 3

Grade 10; spring semester; ½ credit, meets 4 times per 7 day cycle
Grades 11, 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Photography 1 (for Level 2) and 2 (for Level 3)

Photography 2 & 3 are advanced digital photography courses that emphasize studio lighting, product photography, and alternative photographic processes. Students will refine their skills through an in-depth exploration of digital photography, focusing on both artistic expression and technical skill development. Key topics include studio lighting techniques, emerging genres such as photojournalism and fashion photography, and advanced storytelling. Students will have opportunities to showcase their work in *The*

Campus Lantern. Collaborative art critique sessions will promote constructive feedback and growth, while an introduction to portfolio development will help students curate their best work for future opportunities.

Photography Portfolio

Grade 11; spring semester; ½ credit, meets 4 times per 7 day cycle
Grade 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: One Semester each of Photo 1, One Semester of Photo 2, and One Semester of Photo 3

Photography Portfolio is designed for a select group of advanced students who are interested in creating a photographic portfolio for college submission. The portfolio may serve as the primary component of an art school application or as a visual supplement to other materials. Students will focus on personal projects, allowing them to explore their individual interests and creative vision. The portfolio will include 12-24 high-quality digital images, selected for their technical precision, aesthetic quality, and conceptual depth. In addition to the images, students will submit an artist bio and a comprehensive written analysis of their work, both of which will be integral to the final portfolio package.

10th - 12th Grade New Media Options

Department Chair: Ed Glassman (eglassman@sch.org)

Engineering Chair: Daniel Jacobs (djacobs@sch.org)

Fashion Design and Innovation

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

This course introduces students to fashion design, with an emphasis on digital fabrication. Students will learn how to sketch fashion flats, sew using custom-designed patterns, and integrate innovative techniques that merge traditional garment making with 3D printing, laser cutting, vinyl cutting, and other digital fabrication tools. The end of the semester will culminate into a fashion display that showcases original fashion pieces designed and created from concept development to final garment construction. 2D and 3D Modeling software such as Rhinoceros 3D and Adobe Illustrator will be utilized, and there will be a light emphasis on marketing and retail.animations.

Architectural Design 1

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

This course will teach students the foundations of architectural design and theory. Key concepts such as abstraction, representation, program, plan, materials, historical context, and structure will be paired with studio design projects. Studio projects will teach critical thinking and the fundamentals of building design including architectural drawing, model making, and original conceptual development for small-scale urban

design. The class will simultaneously incorporate traditional and digital methods of design generation and visualization.

Architectural Design 2 & 3

Grade 10; spring semester; ½ credit
Grades 11, 12; fall/spring semester; ½ credit , meets 4 times per 7 day cycle

Prerequisite: Architectural Design 1 (for Level 2) and 2 (for Level 3)

This course is a continuation of Architectural Design 1 and will focus on using more of Rhino 3D's tools for modeling and form finding. Students will further their understanding of architectural design through a real-world project brief which will take into account a geographical site, cultural context, and site-planning. The final project will involve building a scale model and continuing to learn how to use the digital fabrication tools in the fabrication lab.

Design Portfolio

Grade 11; Spring Semester; ½ Credit, Meets 4 Times Per 7 Day Cycle
Grade 12; Fall/Spring Semester; ½ Credit, Meets 4 Times Per 7 Day Cycle

Prerequisite: One Semester of Arch Design 1, One Semester of Arch Design 2, and One Semester of Arch Design 3

This course helps students prepare a Design Portfolio for those interested in design majors as they apply for college. These majors could include but are not exclusive to Architecture, Interior Design, Graphic Design, Digital Arts, Industrial Design, Interior Architecture, New Media and the Arts, and Animation. The student will work individually with the instructor and emphasize individual investigation and discovery with his or her body of art and design work. The student will create their portfolios specific to the college or university's requirements, including both paper/physical portfolios, or digital portfolios and web based portfolios.

Digital Art and Graphic Design 1

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Do you have a message to communicate? How do you send your message? If you use any visual medium at all—if you make a poster; type a letter; create a business logo, a magazine ad, or an album cover; even make a computer printout—you are using graphic design. Digital Art will teach students the concepts and aesthetics of computer-generated graphic design. Students learn about graphic design while working in Adobe Photoshop and Illustrator as well as with traditional art and design media. Projects involve digital imaging, typography, identity design, and page layout. The student’s creative process and problem-solving skills are emphasized throughout the course.

Digital Art and Graphic Design 2

Grade 10; spring semester; ½ credit, meets 4 times per 7 day cycle
Grades 11, 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Digital Art and Graphic Design 1

Digital Art 2 takes the next step into publishing, advertising, or in-depth artistic production. Students continue working in Adobe Photoshop and Illustrator, but also get an introduction to InDesign, as well as with traditional art and design media. Projects involve digital imaging, typography, identity design, and page layout. The student's creative process and problem-solving skills are emphasized throughout the course.

Creative Technology I: AI & Prototyping

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

This course is a studio for digital creativity, where your imagination is the blueprint, and AI is your brush. Moving beyond traditional coding drills, you will use Generative AI (ChatGPT, Gemini, Copilot) to rapidly translate your creative concepts into working software. Whether you want to build a digital art installation, a weird web experiment, or a functional tool, this class teaches you how to go from "Idea" to "Built" in a single session. By the end of each project, you'll have a shareable creation that will be displayed in a virtual gallery or classroom showcase, blending technology with artistic vision.

Creative Technology II: Advanced Studio

Grade 10; spring semester; ½ credit, meets 4 times per 7 day cycle
Grades 11, 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: 1 Semester of Creative Technology I

This self-directed studio invites you to push the boundaries of digital creation as an artist and designer. Now that you understand the tools, you will tackle complex, multi-week projects of your own design. This is "Open Studio" time where you are the Lead Engineer and Designer. You might build social platforms, generative art engines, or complex interactive narratives. This is your chance to curate and refine work that could be shared in a digital gallery, classroom showcase, or portfolio, combining technical skill with your unique creative vision. The goal is to push the boundaries of what you can create when you combine human creativity with AI horsepower.

Creative Technology III: Digital Ecosystems & Original Creation

Grades 11–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: 1 Semester of Creative Technology I and 1 Semester of Creative Technology II

This course operates at the bleeding edge of what is possible. Students will explore complex integrations—connecting code to APIs, databases, or hardware—to design interactive installations, generative artworks, and digital experiences. You aren't just building standalone toys anymore; you are building robust, scalable digital ecosystems. Students are encouraged to experiment with new, unproven technologies to create work that has never been seen before. Highlight the possibility of public display or exhibition of cutting-edge work. Experiment with new, unproven technologies to create cutting-edge work that has never been seen before, with the possibility of public display or exhibition.

Creative Technology IV: The Digital Portfolio

Grades 11–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: 1 Semester of Creative Technology I, 1 Semester of Creative Technology II, and 1 Semester of Creative Technology III

For the creative technologist, your code is your code is your artwork and your signature. This capstone focuses on curating, polishing, and deploying your best work into a professional web portfolio. You will refine your work for both technical quality and artistic impact, and by the end of the year, you'll have a live, sharable showcase that demonstrates your ability to imagine, build, and display sophisticated digital art and experiences.

Computer-Aided Design and Manufacturing

Grades 10–12; elective; fall semester; ½ credit, Honors available
*Cross listed with Engineering- CAD/CAM can be used to satisfy one semester credit of Art

This course introduces students to concepts in mechanical engineering and product design through digital modeling and hands-on manufacturing. Students learn how ideas move from concept to functional prototypes through computer-aided design (CAD) and computer-aided manufacturing (CAM) using industry-standard machines and tooling. Through structured, project-based learning, students apply the design-build-test-analyze cycle to develop skills in technical drawing, parametric modeling, part integration, and fabrication using Autodesk Fusion 360, a standard program in college and industry. Projects emphasize utility, manufacturability, repairability, and clear communication of design intent through drawings and finished products.

Students safely use advanced fabrication equipment including CNC routers and mills, laser cutters, and 3D printers to prototype and manufacture components in wood, plastic, and metal. This course prepares students for further study in engineering, technology, and product design, while also supporting visual arts pathways such as our mixed media arts and visual arts, by reinforcing spatial reasoning, material understanding, and the design of projects that combine artistic vision with engineering precision.

Introduction to Video Production

Grade 9; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Students in this class will explore digital storytelling, from script to finished film. Students will learn the foundational elements of what it is to tell stories through visual mediums. They will also engage with the question of why one would want to tell a story this way. We will learn to use video cameras, lighting instruments, and microphones and will edit video work in DaVinci Resolve. This project-based class is designed so students are learning as they create, and they reflect on what they are making. The final project will be designed by the student and finalized in a format that the student can use to share their work.

Video Production 1

Grades 10–12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

In this class, students are grouped into a production team with a Director, Actors, Director of Photography, Lighting Designer, Camera Operator, etc. as we dissect a script in order to create it as a film. Each film made has a budget. This class is completely hands-on and project based. Students have an enormous amount of creative control throughout the production process and are encouraged to share their thoughts and perspectives. This is a unique opportunity to create at SCH.

Video Production 2 & 3

Grade 10; spring semester; ½ credit, meets 4 times per 7 day cycle
Grades 11, 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Video Production 1 (for Level 2) and 2 (for Level 3)

This class is offered to advanced students who have been filmmaking at SCH for some time already. This class is for students who wish to continue the style of production explored in Video 1.

Video Production Portfolio

Grade 11; spring semester; ½ credit, meets 4 times per 7 day cycle
Grade 12; fall/spring semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: 1 Semester of Video Production 1, 1 Semester of Video Production 2, and 1 Semester of Video Production 3

Video Production Portfolio is offered to highly motivated Video students who wish to expand their knowledge in all aspects of video production by producing large-scale video works. Students are expected to work independently and gather the necessary crew needed for extensive shoots. The student and the instructor will meet before each new project to define new skills to develop and will work together to create a timeline for student work. Students can shape their projects in a variety of ways, and a portfolio will

be completed by the end of the semester. Students will present their work to the Video Production class when each project is complete and each video will be showcased on the Vidcast YouTube site.

9th - 12th Grade Performing Arts Options

Department Chair: Megan Monaghan (mmonaghan@sch.org)

Theatre Production

Grade 9; fall semester; ½ credit, meets 4 times per 7 day cycle

Students taking this course will work with other students taking Acting, Technical Design, Directing, and Playwriting, collaborating as part of a theatrical production team in the creation of live performances. This course is part of five Theatre Production courses meeting simultaneously in the same block. Students need to select between either an Acting or a Technical Design concentration.

Theatre Production: Acting

Grades 9–12; fall semester; ½ credit, meets 4 times per 7 day cycle

Students will explore and develop acting and communication skills, including improvisation, script analysis, character development, stage presence, and voice and movement techniques. This course meets simultaneously with the other Theatre Production courses as students collaborate in the creation of live performances.

Honors Theatre Production: Advanced Acting

Grades 10–12; fall semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Theatre Production: Acting

This course offers highly motivated theatre students the opportunity to further develop their acting and communication skills. Students will focus on the more advanced aspects of standard acting techniques and methods. This course meets simultaneously with the other Theatre Production courses as students collaborate in the creation of live performances.

Theatre Production: Technical Design

Grades 9–12; fall semester; ½ credit, meets 4 times per 7 day cycle

Students will explore and develop aspects of technical theatre (crew), utilizing script analysis in the creation and construction of scenic, property, costumes, lighting, and sound designs. This course meets simultaneously with the other Theatre Production courses as students collaborate in the creation of live performances.

Honors Theatre Production: Directing

Grades 11, 12; fall semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Theatre Production: Acting and Theatre Production: Technical Design OR Theatre Production: Acting and Theatre Production: Advanced Acting

This course offers the highly motivated theatre student the opportunity to explore and develop aspects of theatrical directing, including higher level script analysis, effective blocking, use of tempo, dynamic, and articulation choices, and the successful coordination of actors and technicians. Students will also practice communication and leadership skills. This course meets simultaneously with the other Theatre Production courses as students collaborate in the creation of live performances.

Honors Theatre Production: Playwriting

Grades 11, 12; fall semester; ½ credit, meets 4 times per 7 day cycle

Prerequisite: Theatre Production: Acting and Theatre Production: Technical Design OR Theatre Production: Acting and Theatre Production: Advanced Acting

This course offers the highly motivated theatre student the opportunity to explore and develop aspects of playwriting in the creation of original dialogue and stage directions. Students will utilize the standard play-script format and higher level script analysis as they edit and revise their work in order to more effectively communicate the story and message of their play. This course meets simultaneously with the other Theatre Production courses as students collaborate in the creation of live performances.

History Of Musical Theatre

Grades 10–12; spring semester; ½ credit, meets 4 times per 7 day cycle

This survey course introduces and explores musical theatre “from page to stage” as a live performance art form. Topics will include the relationship between theatre and society — by putting shows into their greater cultural and historical context — and dramatic structure, theatrical representation, and production challenges. From classics like *Oklahoma* to historically-based masterpieces like *Hamilton* and *Come from Away* to modern commentaries like *Rent* and *Tick, Tick, Boom*, the course will feature listening, reading, discussion and engaging with live performances and video archives of past performances of pivotal musical theatre productions.

COURSE OFFERINGS: ATHLETICS

Athletic Director: Dave Wilson (dwilson@sch.org) (outgoing) Becca Main (incoming July 1, 2026)

Associate Director of Athletics: Aimee Keough (akeough@sch.org)

The Upper School Athletic program is set up on an elective basis. *Below are the requirements for the school year 2026-2027*:

- 9th, 10th, and 11th graders must participate for two seasons. One season requires participation on an athletic team as a player, manager, or Fit for Life (5 days a week, 1 hr per day). The second requirement must be fulfilled as a player or manager on an athletic team, or by participating in Robotics (3 hours per week in lab, outreach, competition, or competition support), Players (90 hours total per season cast or crew/tech), Facilitators/DEI (30-40 hours per season), SCH Volunteers (3 afternoons per week for one season), Campus Lantern (One season of participation after school, as illustrators, photographers, editors, layout and design, and writers), or Trident TV (2 season of participation).
- 12th graders must participate for one season on an athletic team as a player or manager or be enrolled in Fit For Life.
- **Fit for Life is used only as a primary sport replacement, instead of playing a sport** and meets 5x/week for one hour each day in the Fitness Center, in fall, winter, and spring seasons. **Fit for Life cannot be used as a secondary credit. Exception: If you are managing a sport as your primary credit, you may use Fit for Life as your second credit.**
- Please see the information below the chart for Independent Study options.

Students considering participation on an athletic team should seriously consider the commitment they are making to their sport. All players at all levels are expected to meet the time, effort, and demands to become proficient in the skills and strategies of their sport. Attending all practices, games/matches is mandatory, including pre-season and vacation for anyone hoping to make Upper School teams. Any exceptions will be considered on a case-by-case basis. This attendance is also required for managers and videographers. A varsity athlete who leaves a team at any point for any reason becomes ineligible for credit and end-of-season awards.

Please read the notes below. Any questions should be directed to either the appropriate coach or the Associate Director of Athletics, Aimee Keough at 215-247-7200 ext 7168 or akeough@sch.org.

Below is the list of athletic credit options that are offered for the 2025-2026 school year:

Fall	Winter	Spring
Crew (B/G) experienced only	Crew (B/G)	Crew (B/G)
Cross Country (B/G)	Basketball (B/G)	Baseball (B)
Field Hockey (G)	Ice Hockey (Coed)	Golf (G)
Football (B)	Squash (B/G)	Lacrosse (B/G)
Golf (B)	Indoor Track (B/G)	Outdoor Track (B/G)

Soccer (B/G)	Wrestling (Coed)	Softball (G)
Tennis (G)	Fit For Life (Coed) Primary Only	Tennis (B)
Volleyball (G)	SCH Volunteers (Coed)	Fit For Life (Coed) Primary Only
Fit For Life (Coed) Primary Only	Robotics/Players (Coed)	
SCH Volunteers (Coed)	Facilitators/DEI (Coed)	SCH Volunteers (Coed)
Robotics (not 9th graders)/Players (Coed)	Campus Lantern (Coed)	Robotics/Players (Coed)
Facilitators/DEI (Coed)	Trident TV (Coed must participate in 2 seasons)	Facilitators/DEI (Coed)
Campus Lantern (Coed)		Campus Lantern (Coed)
Trident TV (Coed must participate in 2 seasons)		Trident TV (Coed must participate in 2 seasons)

Please note:

1. Tryouts are dependent on numbers in each season. Traditionally, the below sports will have a limit on participants:
    - **Fall:** Crew (B/G); Golf (B); Tennis (G); Volleyball (G); Soccer (B/G)
    - **Winter:** Basketball (B/G); Squash (B/G); Crew (B/G)
    - **Spring:** Baseball (B); Crew (B/G); Golf (G); Tennis (B)
    - *Manager positions are LIMITED and will be granted to returning managers first, then on a first-come basis. Please email Ms. Keough with interest.*
2. **Crew – fall:** The fall crew program (B/G) is for experienced rowers only. There is a cost associated with this program and no transportation is provided to the boathouse/river.
3. **Pre-season Fall Information:**
    - Pre-season practice is a two-week period (the 2 weeks preceding the first day of classes)—three weeks for football.
    - Teams traditionally practice at least once a day, and for some teams twice a day, every day, until the beginning of school. These practices are mandatory for anyone wishing to participate on either a varsity or junior varsity team. Any exceptions will be considered on a case-by-case basis.

Independent Athletic Waivers

- Students can only get credit for an independent activity for 1-2 seasons per year.
- Students must participate in the activity for a minimum of 10 hours per week.
- Students may participate in a **SPORT or ACTIVITY** not offered at SCH Academy. eg: equestrian competition, dance, swimming, rugby.
- Students must be training for competition in that sport or activity.
- Only students in good academic standing will be considered.
- New for the 26-27 school year: Athletes may be able use their club team season as their secondary credit, **PROVIDED** that they:
- **1. Played or will play the sport for SCH that school year.**
- **2. Practice for a minimum of 10 hours per week with your club or team.**
- **3. Play games with your club/team.**

All independent athletic waiver requests are subject to approval by the Associate Athletic Director/Athletic Director. See the Blue Devil Resource Tile on MySCH for additional information.

COURSE OFFERINGS: SANDS CENTER FOR ENTREPRENEURIAL LEADERSHIP (CEL)

Department Chair: Ed Glassman (eglassman@sch.org)

Engineering Chair: Daniel Jacobs (djacobs@sch.org)

The Sands Center for Entrepreneurial Leadership (CEL) provides unique learning opportunities that empower students to tackle any challenge using entrepreneurial thinking. These classes incorporate technology, design, and entrepreneurship in a hands-on, project-based fashion. At SCH Academy, entrepreneurship is far more than just business. It is a unique way to look at the world: a perspective that will move a student from thought to action—from “I wish this was better” to “I am going to make it better.” The skills and habits of mind that students will acquire through these CEL classes will help them to become entrepreneurial problem solvers.

What Classes Are Offered?

Students in 9th grade will be offered four Entrepreneurial Leadership course options, outlined in the section below. Ninth graders will pick two experiences. These classes will introduce students to a variety of entrepreneurial, design, and technology skills. In 10th grade, students will tackle a CEL Capstone Project—a student-defined project that utilizes key entrepreneurial skills in the pursuit of creating a product or service, a software application, a social

entrepreneurial endeavor, or a creative project. In 11th and 12th grade, students can continue their entrepreneurial pursuits through a variety of classes offered by the New Media, Engineering, and History Departments, as well as the CEL Venture Accelerator program. CEL classes will meet three times in the 7-day cycle.

Required CEL Courses

Product Design

Grade 9; meets 3 times per 7 day cycle

Offered by the CEL and New Media Departments, this class introduces students to creative problem solving through design. Students build visual literacy skills and engage in the design process involving 2d drawing with Adobe Illustrator, and 3D modeling and prototyping with the laser cutter, vinyl cutter, heat press, and 3D printer. Throughout the semester-long course, students learn to identify problems and seek solutions in real-world projects that teach the basic skills of Product Design.

Smart Engineering Design

Grade 9; meets 3 times per 7 day cycle

This CEL course, offered by the Engineering Department, invites students to create products that integrate hardware and software together. Students will learn to program microcontrollers and read data from sensors to create interactive systems that sense their environment, make smart decisions, and act on the world. They will also use Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM) tools to create their design, fostering a deep understanding of the dynamic interplay between engineering design and product realization. Get ready to embark on a hands-on journey into the world of Smart Engineering Design!

Introduction to Accounting and Finance

Grade 9; meets 3 times per 7 day cycle

Ready to take control of your financial future? This course equips 9th-grade students with the essential tools to manage money for themselves and for the business world. Starting with a "Spreadsheet Bootcamp," you will master the software used by professionals to track data, automate calculations, and visualize trends. You will then step into the shoes of an entrepreneur, learning how small businesses track revenue, categorize costs, and measure profit using real-world accounting equations. In addition to learning how to use spreadsheets for business and accounting you will also learn how to manage your own money. We will explore financial vehicles for saving and investing as well as how and when to use loans and debt in both a personal and business context.

Introduction to Artificial Intelligence

Grade 9; meets 3 times per 7 day cycle

Discover the fascinating world of Artificial Intelligence (AI) through hands-on activities and creative projects designed for beginners. This course brings AI concepts to life with real-world applications in gaming, art, sports, and more. Train simple AI models, design chatbots, and explore cutting-edge tools while learning how AI is shaping our future. Dive into ethical questions and exciting possibilities as you develop the skills to create innovative, AI-driven solutions. By the end, you'll understand AI's transformative role and be ready to imagine new ways it can solve problems and inspire change.

CEL Capstone

Grade 10; meets 3 times per 7 day cycle

Students will pursue a project of their own design, utilizing the skills that they have acquired through their prior CEL experiences. With the guidance of a lead faculty mentor, as well as subject matter experts, students will work in small teams to design a product or service, a software application, a social entrepreneurial endeavor, or a creative project. The CEL capstone will culminate in a showcase event, where each student team will display, demonstrate, and present their work in a public forum.

CEL Electives

Cultivating Leadership

Grades 11, 12; fall semester; ½ credit, meets 5 times per 7 day cycle.

Cultivating Leadership is an essential course designed for high school students eager to explore and master elite leadership principles. This dynamic program goes beyond the classroom, delving into crucial topics like teamwork, positive mindset, resilience, goal setting, and overcoming failure.
We'll introduce foundational sports psychology concepts, such as situational leadership and group development, integrating knowledge from biomechanics, physiology, kinesiology, and psychology. Understand how professional athletes, coaches, and teams incorporate psychological skill training (PST) to enhance performance.

We will discuss the burnout phenomenon and combat the fear of failure as we examine the many principles associated with building a winners mindset.Through a varied pedagogical approach consisting of class discussions, debates, movies, guest speakers, presentations, and more, we will all learn what it takes to reach our fullest potential, both in and out of the classroom.
The course emphasizes varied leadership styles crucial for building high-performing organizations. We'll explore advanced techniques like flow, positive self-talk, negative thought stopping, growth mindset, and visualization/imagery.

Tabletop Game Design

Grades 11, 12; fall semester; ½ credit, meets 5 times per 7 day cycle.

Tabletop gaming is a social pursuit that dates back at least five thousand years and continues to this day with a global industry that is valued at around thirteen billion dollars and growing. There has never been a better time to be a board game creator! This course will provide an understanding of the fundamental design principles used in the creation of modern board and card games. Students will gain practical experience with the tools, techniques, and concepts needed to build a tabletop game from scratch. We will examine four key aspects of the design process— mechanics, theming, playtesting, and rule development— with an emphasis on learning how each performs a vital role in building a good game system.

In the first half of the course, we will 'playtest' a variety of popular and critically acclaimed games that illustrate different aspects of mechanical and thematic integration. We will approach this task with an engineer's mindset, exploring how each part contributes to the overall functionality and playability of the game. Throughout the course, students will learn design practices and terminology, engage in written reflection, and perform small scale design challenges that parallel the exemplar. Once we have surveyed a wide range of turn, action, and resolution structures, students will work in teams to create a prototype and then playtest an original game. This process will involve collaboration, creativity, iterative testing, and the use of physical and digital modeling tools (such as the laser cutter, the 3D printer, and a digital playing card creator). Finally, students will have the opportunity to learn about the industry by attending a board game convention and/or speaking with a professional who is currently working in the industry.

Statistics and Financial Literacy

Grades 11, 12; Full year course; 1 credit, meets 5 times per 7 day cycle.

Prerequisite: successful completion of Algebra II.

Interpreting data and making informed financial decisions is something that no future citizen can avoid. We begin collecting and using data at very early ages to understand sports, business trends, and weather predictions. Financial decisions that we make early on in our lives can have positive and adverse effects on our quality of life as older adults. In this full year course, you will become critical consumers of data while learning how to leverage this data and other mathematical concepts to make informed financial decisions. Within these contexts, you will engage with the financial topics of taxes, bank accounts, budgeting, investing, credit, paying for college, and insurance by leveraging key mathematical concepts and skills from algebra, functions, modeling, correlation, probability, and descriptive and inferential statistics.

Positive Psychology

Grades 11, 12; spring semester; ½ credit, meets 5 times per 7 day cycle.

What actually shapes happiness, motivation, and a sense of purpose, and how do psychologists study these questions? This course examines what psychology and neuroscience reveal about human flourishing. Students study how emotion and stress are processed in the brain, why negativity bias exists, how relationships and belonging influence well-being, and what it means to experience deep engagement or "flow." Through analysis of empirical research, students evaluate psychological models of well-being, comparing historical frameworks such as Maslow's hierarchy of needs with contemporary approaches like PERMA. Through writing, discussion, surveys, and small-scale research investigations, students develop skills in social science inquiry, data analysis, and critical evaluation. This course is especially well suited for students curious about the psychology of happiness, neuroscience, and how research sheds light on motivation, meaning, and well-being.

Venture Accelerator

Grade 10–12; fall/spring semester; ½ credit, variable meeting times per cycle.

Prerequisite: Submission of application prior to enrollment

The Center for Entrepreneurial Leadership's Venture Accelerator (CELVA) is a forum for students to learn entrepreneurship by doing, where they have the opportunity to work on real ventures under the guidance and tutelage of accomplished entrepreneurs and professionals. Students will be accepted into this elective by application—submitting for-profit, non-profit, advocacy, and personal project ideas for consideration. Students may use the elective to continue their work on either a pre-existing venture or new venture. Outstanding work within the CEL Venture Accelerator elective can result in departmental distinctions and seed funding grants.

AP Business Principles and Personal Finance

Grade 11-12; Full year course; 1 credit, meets 5 times per 7 day cycle.

Prerequisite: Departmental approval and submission of student interest statement prior to enrollment

AP Business with Personal Finance is a yearlong high school business and personal finance course that aligns closely with a college-level introduction to business course. Students explore the business disciplines of entrepreneurship, marketing, finance, accounting, and management through real-world business applications, case studies, and project based learning.The AP Business with Personal Finance course was built in partnership with industry advisors, higher education faculty, high school educators (including Mr. Glassman), and career and technical education (CTE) leaders. This AP course gives students the tools to take control of their careers, understand how businesses shape the world, and make confident, informed decisions.

COURSE OFFERINGS: ENGINEERING AND ROBOTICS

Department Chair: Daniel Jacobs (djacobs@sch.org)

SCH Academy invites every student to explore engineered solutions to real-world problems. Through a broad curriculum, students have the opportunity to innovate from their first concept to their fully realized design. Through hands-on projects, our courses teach students to design, build, test, and analyze, not just physical prototypes, but also models and simulations of complex systems.

Our core philosophy is that there should be many pathways in and out of STEAM to prepare students for college success. Our courses introduce students to core concepts in Mechanical and Materials Engineering, Biomedical Science and Engineering, Electrical and Computer Engineering, and Computer Science. Central to this mission is employing design thinking principles from the initial stages of research and need-finding to the final stages of testing, evaluating, and communicating their results to a non-technical audience.

Students are encouraged to pursue projects across the traditional departmental boundaries to learn how to integrate the skills developed in Engineering with skills learned with Science, Art, Math, and CEL. We collaborate with both internal and external stakeholders to sponsor student design projects that maximize the impact that our students have on the broader community.

At all grade levels and experience levels, students are invited to participate in our world-class after-school robotics team where they will compete with international teams of students from in the annual FIRST Robotics Challenge.

CP/Honors Pathway

All single semester courses are offered at CP and Honors levels. For the year-long courses, only the Honors level is offered. In all the courses, both CP and Honors will complete a standard curriculum in the core concepts of each course. With permission from the chair, students may apply for the honors sections based on their interest and experience. Honors students are required to complete both the standard curriculum and additional extension assignments.

In addition, all honors students must propose and complete an original, end-of-semester or end-of-year project of significant rigor. To be approved for the year-long Honors Engineering Design or Research, students must complete 2 of the semesters courses in Engineering at either the CP or Honors level, and have permission from the chair.

Computer-Aided Design and Manufacturing

Grades 10–12; elective; fall semester; ½ credit, Honors available
*CAD/CAM can be used to satisfy one semester credit of Art

> This course introduces students to concepts in mechanical engineering and product design through digital modeling and hands-on manufacturing. Students learn how ideas

move from concept to functional prototypes through computer-aided design (CAD) and computer-aided manufacturing (CAM) using industry-standard machines and tooling. Through structured, project-based learning, students apply the design-build-test-analyze cycle to develop skills in technical drawing, parametric modeling, part integration, and fabrication using Autodesk Fusion 360, a standard program in college and industry. Projects emphasize utility, manufacturability, repairability, and clear communication of design intent through drawings and finished products.

Students safely use advanced fabrication equipment including CNC routers and mills, laser cutters, and 3D printers to prototype and manufacture components in wood, plastic, and metal. This course prepares students for further study in engineering, technology, and product design, while also supporting visual arts pathways including mixed media, ceramics and woodworking, by reinforcing spatial reasoning, material understanding, and the design of projects that combine artistic vision with engineering precision.

Computer Programming Methodology

Grades 10–12; elective; fall semester; ½ credit, Honors available

This course introduces students to concepts in computer science, information science and technology through software design, object-oriented programming, and algorithmic problem solving. Students will learn how to incorporate modern software engineering principles: program design, decomposition, encapsulation, abstraction, and validation. Through structured, project-based learning, students apply the design-build-test-analyze cycle to understand how to design software that is robust and efficient and can be updated and maintained with time. Students will create apps and applications using UI/UX design principles and learn how to use Git for version control and to work effectively in teams.

The curriculum is implemented in the Python language and the Pycharm IDE. Students will learn core concepts of object-oriented programming and debugging as well as more advanced elements such modules, packages, file IO, and integrating third-party libraries for scientific computation and data analysis. This course prepares students to employ programming and computational tools in college and industry, no matter which field of study they pursue.

Design and Control of Mechatronic Systems

Grades 10–12; elective; spring semester; ½ credit, Honors available

This course introduces students to the interdisciplinary study of mechatronics i.e. systems where sensors collect information, software processes that data, and actuators to interact with the physical world. Students will apply concepts in mechanical, electrical, and computer engineering as they learn how systems create meaningful and intelligent interactions with the physical world. Through structured, project-based learning, students apply the design-build-test-analyze cycle to design systems that can read in noisy sensor data, identify the true signal within the noise, and use that data to make intelligent actions.

Students will learn how systems read and calibrate sensors, use analog and digital filtering to remove sensor noise, and apply control principles to generate a desired behavior. While robotics projects are an important example of mechatronic systems, the skills learned in this course will benefit students interested in many different career paths as many fields need new technologies that use data to improve their interaction with the world.

Human Movement Biomechanics

Grades 10–12; elective; spring semester; ½ credit, Honors available

This course introduces students to the concepts from biomedical engineering and science through the interdisciplinary study of human movement biomechanics. By introducing students to perspectives from a variety of disciplines (i.e. applications in sports medicine, physical and occupational therapy, and rehabilitation), students will gain a deeper understanding of how humans coordinate neural signals, sensor information, and muscle activity to produce movement and interact with the world.

Students will learn about the experimental techniques used to analyze human movement, such as motion capture, electromyography (EMG), wearable systems, and force plates. Students will also learn about how musculoskeletal modeling and simulation are used in research and product design by using OpenSim, an free, open-source software system for biomechanical modeling, simulation and analysis. The skills learned in this course will benefit students interested in pursuing careers at the intersection of medicine and engineering and give students insight into human health, therapeutic treatments, and rehabilitation.

Honors Engineering Design Project

Grades 11, 12; elective; full year; 1 credit

Prerequisite: Two of the Previous Electives, and departmental approval

This honors-level Design course is for students who have demonstrated their ability to successfully complete their independent projects in the previous electives. Students may propose any project that has clear deliverables for each of the 4 foundational concepts in the department (design - build - test - analyze)). All project proposals should be approved by the Department Chair well in advance of enrollment deadline. Previous projects include: development of an electric power transmission for the go-kart, a system for converting unpowered folding wheelchairs to powered, a system for converting a gas lawn mower to electric, and high-energy particle sensing platforms for high-altitude balloon research.

Honors Engineering Research Project

Grades 11, 12 elective; semester; 1/2 credit

Prerequisite: Two of the Previous Electives and departmental approval

This honors-level research course is for students who have demonstrated their ability to successfully complete their independent projects in the previous electives. Students may propose any project that has clear deliverables for each of the four foundational concepts in the department (design - built - test - analyze). In addition, student proposals should be able to clearly state the new knowledge gained by their work and have plans to deliver their work at local and/or national science competitions such as the PA Governor's STEM Competition, the PA Junior Academy of Sciences (PJAS) science competition, and the International Science and Engineering Fair.

Upper School Robotics (Team 1218)

Students are encouraged to join the robotics team and participate in the annual FIRST Robotics Competition. FIRST is an international robotics competition in which teams of high school students compete by designing, programming, and driving a large-scale robot in a 3v3 team game.

Each year, roughly half of the team focuses on building, programming, and testing the robot and the other half performs critical strategic and data analysis, organizes impact and outreach events for the community, and coordinates the business plan to recruit corporate sponsors. Together all of these elements are judged in the run up to the qualification.

Important:

The Robotics team activity starts with the fall activities fair and runs through the winter and spring sports seasons. After the fair, the team focuses on welcoming its new members and competing at the local off-season events with the previous year's robot. The Build phase runs January - February, starting with the kick-off livestream on the 1st Saturday in January. During the build phase the team runs multiple evening and Saturday practices. The Competition phase runs from March - May.

Participation in the FIRST Robotics Competitions may include travel to regional and national competitions. Each competition consists of three full days (Thursday–Saturday or Friday–Sunday) of competitions plus travel time. The regional events are generally held in the eastern PA and NJ area. If the team qualifies, the world championship is held in the US (e.g. Hartford, CT, Washington, DC, St. Louis, MO, Detroit, MI, and Houston, TX). Competition schedule is determined by FIRST and may occur over SCH Spring Break.

While attendance at these competitions is optional, students participating in the Robotics Activity are encouraged to plan on attending at least one. The travel costs associated with attending the competition (food, lodging, and travel) are the responsibility of the student. However, the program runs competitions, hosts fundraisers, and engages corporate sponsors year round to reduce family contribution as much as possible.

COURSE OFFERINGS: ENGLISH

Department Chair: Rebecca McWilliams (rmcwilliams@sch.org)

Our English program cultivates a lifelong passion for reading and writing and promotes student discovery and engagement. SCH students learn to think, read, write, and speak with clarity and conviction. They identify questions and share opinions about texts, wrestle with complex ideas, build persuasive arguments and interpretations, and use writing as a means of creative expression. Students will examine classic and contemporary literature, as well as diverse forms of media.

The courses in our required sequence (9th–11th) emphasize close reading and analytical writing. Eleventh grade English introduces AP English. The department's electives offer students the opportunity to investigate a new and specific realm of study. As schedule and space permit, juniors may enroll in selected electives in addition to their core English course. In grades 10-12, the department offers Honors and AP options. Placement in Honors and AP is based upon a set criteria and is determined by the department.

Summer work is required for all English courses, and students who change their English electives after reading materials have been distributed must contact the English Department to be sure they do the appropriate summer assignment. Also, it is the expectation that any students who add a course during the add/drop period will complete the summer work for the added course.

Required English Classes

The Individual and Society (9th Grade English)

Grade 9; full-year course; 1 credit. ***NCAA Approved.***

Summer reading is required.

This course helps students read texts closely and unpack multiple levels of meaning in order to deepen and complicate their understanding of themselves in relation to the world around them. Students learn to see writing as a collaborative process that involves drafts and revisions, and they strengthen their skills and confidence in written and oral expression. The course is writing-intensive in nature and will incorporate close study of paragraph and essay structures as well as grammar, mechanics, and vocabulary. In order to give students meaningful opportunities to learn and develop, this course will incorporate the following: group projects, formal writing assignments, Socratic seminar discussions, project-based learning experiences, and portfolios of creative work. Texts are drawn from a range of genres (novels, plays, short stories, poetry, and nonfiction) and may include *We Are Not Free* (Chee) *Antigone* (Sophocles), *Fahrenheit 451* (Bradbury), and *The Patron Saints of Nothing* (Ribay).

Reading the World (10th Grade English)

Grade 10; full-year course; 1 credit. ***NCAA Approved.***

Summer reading is required.

In Reading the World, students explore questions of identity, community, gender, race, and class through a focus on global voices. This course continues the arc of 9th grade by asking students to take their new competencies in close reading, critical thinking, student-led discussions, and persuasive writing into challenging works that experiment with literary form. Texts are drawn from a range of genres (novels, plays, short stories, poetry, and nonfiction) and may include *Born a Crime* (Noah), *Macbeth (*Shakespeare), *Night* (Wiesel), *The Alchemist* (Paolo Coelho) and selected poems and short stories.

Honors Reading the World (10th Grade Honors English)

Grade 10; full-year course; 1 credit; Departmental approval for Honors. ***NCAA Approved.***

Summer reading is required.

In Reading the World, students explore questions of identity, community, gender, race, and class through a focus on global voices. This course continues the arc of 9th grade by asking students to take their new competencies in close reading, critical thinking, student-led discussions, and persuasive writing into challenging works that experiment with literary form. At the honors level, students are guided to unpack more complex texts and develop more nuanced writing. Texts are drawn from a range of genres (novels, plays, short stories, poetry, and nonfiction) and may include Born a Crime (Noah), Ten Nights Dreaming and The Cat's Grave (Soseki), Macbeth (Shakespeare), Night (Wiesel), A Handmaid's Tale (Atwood), and selected poems and short stories.

American Stories (11th Grade English, CP and Honors)

Grade 11; full-year course; 1 credit; Departmental approval for Honors. ***NCAA Approved.***

Summer reading is required

In this course, students study a wide range of American literature to strengthen accuracy, depth, and interpretive skill. From contemporary fiction to early twentieth-century works, students examine how authors construct and challenge stories about identity, belonging, and the American Dream. Through close reading and both analytical and personal writing, students explore how race, gender, class, family, and history shape the self and influence American narratives. Students engage with novels, short stories, essays, plays, and documentary film, analyzing how authors use structure, point of view, symbolism, and historical context to illuminate themes of truth, memory, reinvention, and the promises and illusions of the American Dream. Throughout the year, students learn to connect personal and national narratives and consider how the stories we inherit and resist shape what it means to be American. Major works may include The Vanishing Half (Bennett), The Office of Historical Corrections (Evans), College Behind Bars (PBS), The Things They Carried (O'Brien), and The Great Gatsby (Fitzgerald).

Honors students read with greater independence, write with increased nuance and precision, and take on deeper responsibility for seminar discussions and research.

AP Language and Composition

Grade 11; Full-year course; 1 credit. ***NCAA Approved.***

Summer reading is required.

Prerequisite: Departmental approval and application process

The AP English Language & Composition course provides students with the opportunity to read rigorous texts from various eras and in different genres, analyzing the big ideas of the rhetorical situation, claims/evidence, reasoning/organization, and style. At SCH Academy, 11th-grade college preparatory and honors English classes study American Literature. So as not to miss these vital works, American works of nonfiction and fiction will be included in the course. The course is conducted at an accelerated level and is designed, in part, to prepare students for success on the English Language and Composition Exam.

This course exposes students to major periods, writers, and texts of American Literature (both fiction and nonfiction), and also, as The College Board puts it, "engage[s] students in becoming skilled readers of prose written in a variety of rhetorical contexts, and in becoming skilled writers who compose for a variety of purposes. Both their writing and their reading [will] make students aware of the interactions among a writer's purposes, audience expectations, and subjects, as well as the way genre conventions and the resources of language contribute to effectiveness in writing."

The overarching theme for the course is the exploration of American identity, both of the individual and the ever-changing American ethos. Each major unit in the course will focus on thematic concepts related to this overarching theme, as well as on major rhetorical styles and choices made by the authors/speakers/artists. Students will read nonfiction (essays and speeches) and fiction (novels and poetry), and view a documentary film. These titles may include, but are not limited to, the following: The Vanishing Half (Bennett), Citizen (Rankine), The Great Gatsby (Fitzgerald), Into the Wild (Krakauer), College Behind Bars (Novick), Educated (Westover) and selected essays from The Norton Reader (15th & 16th High School Edition), The Language of Composition (Third Edition), and Classical Rhetoric for the Modern Student (Fourth Edition).

English Electives and AP Literature

Please note: The English Department's elective offerings are subject to change depending on faculty availability and student sign ups.

Crime, Punishment, & Justice in American Literature & Society

Grade 12 elective; full-year course; 1 credit. ***NCAA Approved.***

Summer reading is required.

From classic American novels to modern podcasts and documentaries, American culture has long been drawn to stories of crime and justice. This course examines how writers, filmmakers, and storytellers shape our understanding of guilt and innocence, fairness and power, and the people affected by the justice system. Students closely read fiction, narrative nonfiction, memoir, poetry, and documentary texts and investigate how point of view, structure, rhetoric, and voice reinforce or challenge public assumptions about crime and accountability. A major focus of the course is how identity influences both lived experiences in the justice system and the stories created about them. Students explore how race, gender, socioeconomic class, ability, age, and culture shape patterns in policing, sentencing, incarceration, and reentry, and compare literary portrayals with data and contemporary reporting. Coursework includes analytical essays, seminar discussions, comparative reading, and research that synthesizes literary interpretation with credible, real-world evidence. Experiential learning is central to the class. Students conduct field research at *Eastern State Penitentiary*; participate in a *Crime Panel* featuring justice professionals and system-impacted individuals; and engage with firsthand testimony in the *Reclaiming the Narrative: Students for Second Chances* speaker series. In the spring, students help organize and facilitate a schoolwide *Reentry Simulation* to teach peers about the barriers returning citizens face. Through literary study, research, and hands-on inquiry, students develop a nuanced, interdisciplinary understanding of how stories about crime and justice shape and complicate American society.

Introduction to Creative Writing

Grades 10–12; elective; fall semester; ½ credit. ***NCAA Approved.***

Summer reading is required.

Great literature in any form reaches across the gap between writer and reader and makes the reader gasp in surprise, laugh with delight, consider new perspectives, feel, and think in new ways. But compelling stories, poems, and essays don't just fall from the sky or spring fully formed into their creator's mind; they are the product of conscious choices and careful revision. In this course, students will focus on the craft and tools of the writer, reading works in a wide range of forms (flash fiction, short fiction, poetry, humor, and memoir) and investigating how authors approach each of these genres. In addition to analyzing craft, students will try their hands at skill-specific exercises related to short stories, poems, and nonfiction. The classroom will be a space of experimentation and refinement as we practice the tools of the trade. We'll take risks, share drafts, and give and receive feedback through peer editing and writing workshops. The goals of this course are to stretch our imaginations, expand the writing toolbox, produce three polished literary works, and contribute to a supportive writing community. Course texts will vary while studying particular genres.

Advanced Creative Writing

Grades 10-12; elective; spring semester; ½ credit. ***NCAA Approved.***

Prerequisite: Introduction to Creative Writing

"First forget inspiration. Habit is more dependable. Habit will sustain you whether you're inspired or not. Habit will help you finish and polish your stories. Inspiration won't. Habit is persistence in practice."

~ Octavia Butler

This course builds on the foundational skills developed in Introduction to Creative Writing and challenges student writers to delve deeper into their craft. Students will try their hands at more experimental genres (such as metafiction, prose poetry, iconotext, etc.) while also specializing in a more traditional literary form of their own choosing. In all cases, we will focus on the building blocks of effective writing: precise and strategic use of diction and syntax; evocative images and figurative language; resistance to cliché; and the development of a singular voice in narration, dialogue, and lyricism. Each student, in consultation with the instructor, will also select an individualized "mentor author" whose work they will read with an eye towards learning the technical and stylistic tools used by a master of their craft. Throughout the course, we will engage in metacognitive reflection on our growth as writers, give and receive critiques in structured Writer's Workshops, and develop a portfolio of creative work. Course texts will be drawn from contemporary authors and a range of online literary journals specializing in poetry and fiction.

Monsters in Literature

Grades 11, 12; elective; fall semester; ½ credit. ***NCAA Approved.***

Summer reading is required.

In this course, we will explore the figure of the monster in myth, literature, and film, keeping in mind the cultural and historical background of various tales, as well as some central questions: What makes a monster? What distinguishes human from monster? What can monsters tell us about the values, anxieties, and fears of the cultures in which they emerge? Through extensive in- and out-of-class reading, writing, and project-based activities, students will investigate what the cultural politics of monstrosity have to tell us about what it means to be human. Course texts may include *The Odyssey* (Homer), *Beowulf*, *Frankenstein* (Shelley), and *We Have Always Lived in the Castle* (Jackson).

Queer Narratives

Grades 11, 12; elective; fall semester; ½ credit. ***NCAA Approved.***

Summer reading is required.

This course examines the intersections of sexuality, gender, race, class, and nation as it relates to LGBTQ+ (lesbian, gay, bisexual, transgender, queer, questioning, or other identities) literary and cultural traditions, with some detours in film, critical theory, historical primary sources, political and medical writings, personal essays, visual arts, and pop culture from the last 100 years. Using this interdisciplinary approach, we will explore such topics as theories of sexual and gender diversity, identity and community, the Stonewall uprising and the AIDS crisis, marriage equality and equal rights movements, and depictions of LGBTQ individuals in contemporary media.

Rhetorical Theory: Persuasion in Prose and Poetry

Grades 11, 12; elective; fall semester; ½ credit. ***NCAA Approved.***

Summer reading is required.

This course aims to study rhetorical traditions and rhetoric's application in the composition process through the prisms of short nonfiction, speeches, and music. Rhetoric, the art of effective or persuasive communication, is practiced around us daily: on television, on the web, in our conversations, and on our Spotify playlists featuring our favorite songs. One of many goals in this course is to encourage students to be more aware and analytical of the messages broadcasted around them, and know that the "knowledge of rhetoric can help us to respond critically and appreciatively to advertisements, commercials, political messages, satires, [and] irony…of all varieties" (Corbett and Connors, 25). Texts: Course reader with selections from *Classical Rhetoric for the Modern Student*, excerpts from Aristotle's Rhetoric, President Kennedy's Inaugural Address, "The Allegory of the Cave," "Letter from a Birmingham Jail," in addition to excerpts from scholarly essays and song lyrics.

Web of Spies: The World of Secrets, Seduction, and Surveillance

Grades 10-12; elective; fall semester; ½ credit. ***NCAA Approved.***

Summer reading is required for the fall semester.

Why are we so obsessed with spies? This course examines espionage fiction through James Bond and beyond, exploring secrecy, morality, masculinity, power, and propaganda. We'll analyze how spy stories reflect political fears, technological change, and shifting cultural values.

Students will interrogate the glamor and danger of surveillance, question heroism and national duty, and study how suspense is crafted on the page and screen. Expect intrigue, ethical debates, and stylish storytelling.

Journalism

Grades 10-12; elective; fall and spring semester; ½ credit. ***NCAA Approved.***

Summer reading is required for the fall semester.

As staff writers for The Campus Lantern, our student newspaper, students enrolled in this class learn the foundations of journalistic writing, design, and layout and have the opportunity to publish their work to the website and the print editions of the paper. They learn how to find stories with value, conduct interviews, write hard news and feature stories, as well as several different kinds of leads. Students are also introduced to the fundamentals of photojournalism. Studies in media ethics and world news are ongoing.

Note: this course runs at the same time as Narrative Nonfiction and Advanced Journalism, and can only be taken once, during one semester.

Advanced Journalism

Grades 10-12; elective; fall and spring semester; ½ credit. ***NCAA Approved.***

Prerequisite: Introduction to Journalism

This course is open to Campus Lantern staff writers as well as anyone who has taken Introduction to Journalism. After reviewing the foundational elements of reporting, students in Journalism II apply their knowledge to the pursuit of an in-depth feature story, as well as stories in formats that interest them, such as podcasts and broadcasts or other alternative story forms. Studies in media ethics and world news are ongoing.

Note: this course runs at the same time as Narrative Nonfiction and Journalism, and can only be taken once, during one semester.

Narrative Nonfiction

*Grades 10-12; elective; fall and spring semester; ½ credit (*class can only be taken once).*

Summer reading is required for the fall semester. ***NCAA Approved.***

This course introduces students to narrative nonfiction as a form of journalism, a literary genre, and a method of inquiry. Students explore how writers blend reporting, scene, voice, reflection, and structure to illuminate real people, places, and experiences. Through close reading of contemporary authors—including Vivian Gornick, Susan Orlean, Leslie Jamison, Rebecca Solnit, Eula Biss, and others—students analyze how nonfiction stories are shaped: how writers build vivid scenes, craft ethical representations of subjects, and use narrative techniques to make meaning from complex material.

Alongside reading, students engage in sustained writing practice. They compose profiles, place-based essays, short narratives, and two longer braided essays, each requiring them to integrate observation, interview material, and research. Workshops and revision are central to the course; students learn to refine voice, strengthen structure, and revise with clarity, accuracy, and ethical care. By the end of the semester, students will have developed a portfolio of polished narrative nonfiction and a deeper understanding of how true stories function both as literature and as a way of understanding the world.

Note: this course runs at the same time as Narrative Nonfiction and Advanced Journalism, and can only be taken once, during one semester.

Dystopian Literature

Grades 11, 12; elective; spring semester; ½ credit. ***NCAA Approved.***

This course will investigate the art of dystopian literature and short stories. By definition, a dystopia is a society in which oppressive social control is maintained through the illusion of a perfect society. Authors have created countless societies whose founding principles or end goals seem noble and just, but the end result is the opposite. Part of the brilliance of the dystopian form is its ability to cultivate a discerning eye; as the reader dives deeper into this imagined world, harrowing elements of his or her own reality may be illuminated. Through reading a variety of dystopian literature, students will identify and analyze how authors inspire their readers to question the world around them. In short, how do authors make a statement about the real world through an exploration of the imagined? In addition to close reading and analysis, students will create several of their own dystopian societies that illuminate a social issue of concern. Texts include 1984 (Orwell) and several dystopian short stories, ranging from Shirley Jackson's "The Lottery" to Philip K Dick's "Minority Report."

Film as Text: The Analysis of Cinematic Language

Grades 11, 12; elective; spring semester; ½ credit

This course offers a critical understanding and deep appreciation of one of the most influential of modern popular art forms of our time. The beginning of the course serves as an introduction to cinematic language and techniques, and then we will survey the styles, genres, and history of landmarks in American cinema. In order to begin looking at films more analytically and perceptively, we will look at each film through a variety of interpretive, stylistic, and theoretical frames, exploring the relationship between culture and the movies. Through extensive in-class and out-of-class reading and writing, film viewings, and lively class discussion, students will also explore issues such as the relationship of film to narrative fiction and to dramatic literature. Texts may include *Adaptations: From Short Story to Screen* (ed. Stephanie Harrison) and *Looking at Movies: An Introduction to Film*, 3rd ed. (eds. Richard Barsam and Dave Monahan).

The Beautiful Game: Life, Death, and the Humanities

Grades 11, 12; elective; spring semester; ½ credit. ***NCAA Approved.***

Bill Shankly, celebrated and influential manager of Liverpool Football Club, once said, “Some people believe football is a matter of life and death. I am very disappointed with that attitude. I can assure you it is much, much more important than that.” The import and aim of this course is to examine the human condition using soccer as the conduit. On a global scale, soccer—or, football, as it’s commonly known away from American shores—serves much the same purpose as religion or politics: a form of cultural identity for billions of people where allegiances and worldview, for better or worse, are generational and hereditary. In this context, the game is not only a metaphor for life, as suggested by Mr. Shankly, but also a promoter and purveyor of various societies across

the globe. It's also a game that has (and has had) many individuals who are heroes, anti-heroes, and tragic heroes, both on the field and off.

Through the prism of soccer, students will explore topics of power, politics, poverty, race/racism, and gender within the world's "beautiful game." Using the texts and documentaries listed below, students will see a game that, at its best, is one that brings people together highlighting the intensity and wonder of shared human experience. Conversely, at its worst, it is an enterprise that is "ethically fraught[,] morally bankrupt," and lethal (World Corrupt). Possible Texts include selections from *The Ball is Round: A Global History of Football* (by David Goldblatt), *Soccernomics* (2022 World Cup Edition): *Why European Men and American Women Win, and Billionaire Owners Are Destined to Lose* (by Simon Kuper & Stefan Szymanski), *Gazza Agonistes* (by Ian Hamilton) as well as various podcasts, documentaries, and assorted poetry.

Gastronomic Literature: Exploring the Delicious Literary World of Food

Grades 11, 12; elective; spring semester; ½ credit. ***NCAA Approved.***

This course offers a delectable journey into the realm of literature centered around food encompassing novels, children's books, cookbooks, historical texts, memoirs, and articles that celebrate the cultural social and personal significance of food and literature. Students will explore the interplay between food and storytelling, examining how authors and chefs use food as a lens to explore identity, culture, memory, and human connections through diverse readings, discussions, and hands-on experiences. Students will savor the rich tapestry of food-centric literature.

Possible texts include excerpts from Ernest Hemingway's *A Moveable Feast*, Anthony Bourdain's *Kitchen Confidential*, Julia Child's *Mastering the Art of French Cooking*, Samin Nosrat's *Salt, Fat, Acid, Heat*, Alan Davidson's *The Oxford Companion to Food* as well as the memoir *Crying in H Mart* by Michelle Zauner, the novel *Butter Honey Pig Bread* by Francesca Ekwuyasi, selected children's books *Green Eggs and Ham* by Dr. Seuss, *The Very Hungry Caterpillar* by Eric Carle, *Amy Wu and the Perfect Bao* by Kat Zhang as well as the short story "Fish Cheeks" by Amy Tan, the article "Consider the Lobster" by David Foster Wallace and articles, essays, blog posts, and digital media from Smitten Kitchen, NYT Cooking, Ruth Reichl, M. F. K. Fisher, and Craig LaBan.

AP Literature and Composition

Grade 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Summer reading is required.

Prerequisite: Departmental approval

AP students may also enroll in additional English electives each semester if space permits.

This yearlong course focuses on works from the three genres highlighted on the Advanced Placement Literature and Composition examination: poetry, drama, and narrative. Students read and interpret a wide range of texts written in varied styles and

chosen from different centuries. Works studied may include novels and plays by Dickens, Chopin, Woolf, Conrad, García Márquez, Morrison, Shakespeare, Euripides, and Wilde, as well as poetry dating from the Renaissance to the 21st century. Students will also improve their writing skills through work on carefully argued, supported, and polished analytical essays. At the end of the course, students are prepared to take the AP Literature and Composition exam.

COURSE OFFERINGS: HISTORY

Department Chair: Sarah McDowell (smcdowell@sch.org)

In today's dynamic global environment, a strong knowledge of history and the ability to think critically are an essential part of a 21st century education. SCH students study history in inquiry-driven classrooms that promote experiential learning and develop historical empathy. In 9th and 10th grades, students spend two years studying world history, beginning with the Neolithic Agricultural Revolution and ending in today's complex and rapidly changing world. Eleventh graders study American history from colonization onward. In 11th and 12th grades, students may choose from a diverse array of elective courses. Placement in Honors or AP sections is determined by the department.

Required History Courses

9th Grade Foundations Of The Modern World

Grade 9; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval for Honors

This course examines the interactions among major societies that helped shape the modern world. The course begins in the Neolithic Revolution and continues to the Age of Exploration. Using a global perspective, students will explore the issues arising from interactions between humans and the environment, the development of social structures, the interaction of cultures, the creation and expansion of economic systems, and empire building. Research skills, creative analysis, and persuasive writing will be core components of the course.

10th Grade Modern World History

Grade 10; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval for Honors

This course examines the interactions and connections among major societies of the world from the start of the Early Modern Era to the present day. Students will explore new human and environmental connections, increasingly complex economic systems, innovative ideas arising from technological innovation, the rise of the nation-state,

worldwide warfare, and the development of international systems. Research skills, creative analysis, and persuasive writing will be core components of the course.

11th Grade U.S. History

Grade 11; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval for Honors

The course covers the history of the United States from colonial times to the present, focusing on political, economic, and social issues. Students will explore how the United States developed over time into a world power as well as contemporary foreign policy issues. The course will examine the turning points in American history, including the American Revolution, the origins of our Constitution, reform movements, Westward Expansion, the Civil War and Reconstruction, the Gilded Age, World War I, the Great Depression, World War II, the Cold War, and issues in the United States today. Research skills, creative analysis, and persuasive writing will be core components of the course.

11th Grade AP U.S. History

Grade 11; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval for AP

AP U.S. History will cover content and chronology similar to that covered in 11th grade History. Due to the breadth of material and the depth of understanding that students will be expected to obtain in AP U.S. History, there will be a significant summer assignment and regular extensive reading assignments during the school year. Nightly reading may be as much as 10 pages or more. Students will use primary and secondary readings in addition to their text. Students will engage in regular class discussions, research, and regular assessments, primarily based on AP-type questions. Students will also spend time writing in a variety of styles, including AP Long Essay and Document-Based Questions, responding to document-based questions, expository essays, and research-based essays.

HISTORY ELECTIVES

Honors Anthropology: What it Means to Be Human

Grades 11, 12; elective; fall semester, ½ credit. ***NCAA Approved.***

Prerequisite: Departmental approval for Honors

This course is an introduction to the discipline of anthropology with a focus on the four major fields: archaeology, biological anthropology, cultural anthropology, and linguistics. Beginning with an historical and theoretical foundation, students examine how anthropologists make sense of the world and how they study the cultural and physical aspects of humanity. This course will complement the study of world history in 9th and 10th grade, as well as 11th grade U.S. history. The semester culminates in a research

project in which students apply anthropological theory to analyze aspects of their own culture or daily lives.

The primary text will be Kenneth Guest's *Cultural Anthropology: A Toolkit for a Global Age.* The course will also engage with excerpts from scholarly articles and long-form texts as well as various media (films, documentaries, interviews, talks, etc), all from researchers, scholars, and practitioners in the field of anthropology.

Honors The American Revolutionary Experience

Grades 11, 12; elective; fall semester, ½ credit. ***NCAA Approved.***

Prerequisite: Departmental approval for Honors

As we approach the 250th anniversary of the Declaration of Independence, this course explores the complex realities of the American Revolution. We will analyze the military strategies that secured independence from Great Britain, evaluate what "liberty" meant to diverse populations, and investigate the foundational ideals of the new republic. Through rigorous class discussions and a close reading of primary sources, students will engage with extensive literature on the period. The curriculum emphasizes the local experience of Philadelphians through targeted readings and selected field trips, leveraging our proximity to historical sites. The class will culminate in a substantial, independent research project.

World War II in Europe and Beyond

Grades 11, 12; elective; fall semester; ½ credit. ***NCAA Approved.***

Unlike broader survey courses, this course is intended to allow students to learn about one topic in considerable depth by spending the entire semester on a relatively short period of time and focusing on the theaters of WWII. Students will explore the origins of WWII in Europe and Asia, military strategies developed during the war, how the war affected those on the homefront, and the long-term consequences of the war. Sources include primary and secondary text sources as well as non-traditional sources, such as film, poetry, and music. Students will have the opportunity to conduct an in-depth research project.

America Today: 21st Century American Challenges

Grade 11 and 12 combined; elective, fall semester, ½ credit

When the Cold War ended at the end of the 20th century, America entered a world of intense global and digital change. Threats of terrorism and climate change became part of everyday life, American industry and economic systems were globalized, immigration caused demographic shifts and controversy, and racial and economic disparities remained. Twenty-first century Americans became deeply divided politically, leading to intense debate over policy choices to address these issues. This course will explore contemporary American issues and policy choices using the tools of debate, student-led discussion, civil discourse, presentation, and simulations. Student choice and current

events will help shape the curriculum. There will be a culminating in-depth research project.

Rock and Soul: The Soundtrack of America

Grades 11, 12 combined; elective; fall semester; ½ credit

This course seeks to integrate the history of America with the history and progression of Rock and Roll. Students taking this class will be able to trace the history of Rock and Roll and understand the influences it had on major historical events within the United States. The class will cover issues of race, gender, age, and other issues and how Rock and Rock helped to spur rebellion in those areas in an attempt to create equality. The course covers United States History from the mid-1950s through a study of the Blues' progression from its origins to its growth to Rock and Roll and related genres. The course is inclusive of African Americans, Asian Americans, Chicanas/os and Latinas/os, and Native Americans, and their experiences and contributions through music to the history of Rock and Roll. Students will conduct an in-depth research project

Honors Popular Culture

Grades 11, 12; elective; spring semester; ½ credit. ***NCAA Approved.***

Prerequisite: *Departmental approval for Honors*

This honors-level history course explores the evolution of American media throughout the 20th century and its profound role in shaping social identities. By analyzing a diverse range of media—including minstrelsy, radio, film, television, and popular music—students will investigate how media has historically constructed and contested our understanding of race, class, gender, and sexuality. Through a combination of scholarly reading, collaborative projects, and creative presentations, 11th and 12th graders will develop the critical thinking skills necessary to deconstruct modern messaging. Ultimately, this course bridges the gap between historical representation and the digital age, empowering students to navigate and critique today's social media landscape with a sophisticated, historical lens. Students will conduct an in-depth research project

Sports and Society in The U.S. and the World

Grade 11 and 12 combined ; elective; spring semester; ½ credit

Athletics are often seen as an escape from the real world, but they are also a reflection of that world. Athletics often intersects with controversies over race, class, and gender, and frequently connects to issues of social power and global economics. This class explores the history of sports, focusing on moments in time that speak to profound societal changes in the United States and the world. Topics include the fight for equal pay for the U.S. women's soccer team, the controversy surrounding Colin Kaepernick and kneeling during the National Anthem, geopolitical sports rivalries like India versus Pakistan in cricket and the U.S. versus the USSR in the Olympics, and the Supreme Court's recent decision against the "amateur" status of the NCAA. Particular attention will be paid to the history of sports in Philadelphia. Students will conduct an in-depth research project.

International Issues: Global Challenges in the Modern World

Grade 11 and 12 combined ; elective; spring semester; ½ credit. ***NCAA Approved.***

Learn about the role of the UN and other world agencies in addressing complex issues like energy and resource depletion, food and population, war and terrorism, nuclear arms, human rights, environmental issues, and international inequality. Student interest and current events will help shape the curriculum. This course will complement the study of world history in 9th and 10th grade, as well as 11th-grade U.S. history. This course will focus on building the skills of advocacy, debate, student-led discussion, and civil discourse and will culminate with an individual in-depth project.

Possible texts include Brown University Choices literature, major news articles, Council on Foreign Relations resources, Close Up resources, and articles from experts in International Affairs.

Ancient Rome

Grade 11 and 12 combined ; elective; spring semester; ½ credit. ***NCAA Approved.***

"How often do you think about Rome?" is a popular question in the 21st century. To learn more, survey the culture, history, literature, and thought of ancient Rome and the Roman Empire. Learn about Rome from the development of Rome's identity and empire to its domination of the Mediterranean world to its eventual transformation into a Christian and Medieval world. This framework will also incorporate social attitudes, daily life and entertainment, and readings from eminent historians of Rome, e.g. Mary Beard. This course will complement the study of world history in 9th and 10th grade, as well as 11th-grade U.S. history. An independent research project will be the culminating experience of the course. Texts include Mary Beard's *SPQR* and other primary and secondary sources.

Sociology

Grade 11 and 12 combined ; elective; spring semester; ½ credit. ***NCAA Approved.***

This semester-long elective introduces the study of human society, beginning with an exploration of the history of sociology and the foundational thinkers and researchers who first sought to study and understand society and social change. Students will apply different theoretical lenses to examine how social structures, institutions, and cultural forces, among other elements, shape our individual lives. Ultimately, we will develop a "sociological imagination," to think critically about the hidden patterns that govern everyday interactions and global issues.

AP United States Government

Grade 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval

This course examines the foundations of democracy and the Constitution, the delicate balance of power between the legislative, executive, and judicial branches, and between the national and state governments, and civil liberties and rights. Students investigate the forces that drive politics, including public opinion, political parties, the media, social movements, and interest groups, with a special focus on the 2024 and 2026 election cycles.

Students will explore legal and political issues by applying concepts to historic and current events, unpacking Supreme Court cases, analyzing data, and evaluating sources. Students will interpret the Constitution, important political concepts, and data to better understand the American national government and the political actors who interact with it. Coursework emphasizes crafting arguments through advanced research, written argumentation, and verbal communication, as well as AP-style Multiple-Choice and Free-Response Question assessments and project-based learning.

While designed to prepare students for the AP exam, this course will also empower them as critical thinkers and active participants in the democratic process. A highlight of the year is the Civic Action Project, where students design a project to apply their learning to the world beyond the classroom.

COURSE OFFERINGS: MATHEMATICS

Department Chair: Derrick Keister (dkeister@sch.org)

The primary goal of the Mathematics Department is to provide a curriculum that meets the academic needs of each student at Springside Chestnut Hill Academy. The Mathematics Department strives to develop opportunities for students to engage in active inquiry at every course level and to encourage students to achieve their highest mathematical potential.

All students are required to take four years of mathematics and some elect to take one or more additional elective math courses. The typical four-year sequence of mathematics begins with Geometry and extends through Algebra II, Pre-Calculus, Calculus and/or Statistics. Courses in 9th and 10th grade are sectioned into Honors and College Prep while in 11th and 12th grade the classes are sectioned into AP, Honors, and College Prep, allowing for each student to be challenged at an appropriate level. The full range of AP mathematics and statistics courses are also offered in grades 10 - 12, and are taught to the specific AP curriculum. Juniors are required to take the AP Exam or an AP-based final exam at year's end. Seniors may opt out of the AP exam. Students are encouraged to communicate with their math teacher, advisor, college counselor, and parents as they determine the appropriate sequence of courses for their high school program.

Geometry

Grade 9; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental recommendation

This yearlong study of geometry will include such fundamental concepts as points, lines, planes, angles, polygons, and perpendicular and parallel lines. The properties of triangles and triangle inequalities will be studied in depth. Right triangles, congruent and similar polygons, properties of quadrilaterals, coordinate geometry, right triangle trigonometry, and calculating areas and volumes of various 2D and 3D figures will also be studied extensively. Students use inductive reasoning to explore and discover geometric ideas via computer software and hands-on experiences. Students will use deductive reasoning, including informal and formal proofs, to solve various kinds of problems. As students move through the curriculum, they see concepts and problems that are related to questions on the SAT.

Honors Geometry

Grade 9; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval

The main topics in this geometry course are points, lines, planes, angles, polygons, perpendicular and parallel lines, and the fundamental axioms of geometry. In addition, topics include right triangles, congruent and similar polygons, properties of quadrilaterals, coordinate geometry, special right triangles, circles, triangle trigonometry, and properties of three-dimensional figures. Students use geometric ideas to solve problems, find relationships in complex drawings, and construct formal proofs. The ultimate goal is for students to think deductively. To be successful in the course, students must gain a mastery of the facts, see the connections among concepts, and synthesize interrelated ideas to present cogent arguments for their solutions to problems. As students move through the curriculum, they see concepts and problems that are related to questions on the SAT.

Algebra 2

Grade 10; Full-year course; 1 credit ***NCAA Approved.***

Prerequisite: Successful completion of Geometry & Algebra OR Geometry.

This course begins with a review and extension of topics presented in Algebra 1. Topics include linear, quadratic, and other polynomial functions, with an overview of solving systems of equations. Students will investigate the complex number system. The study of Rational, Radical, and Exponential functions will be included as time permits. The numerical, graphing, and other features of the graphing calculator are used to explore and extend the skills and concepts covered. As students move through the curriculum, they see concepts and problems that are related to questions on the SAT.

Honors Algebra 2

Grade 10; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: *A or better in Geometry, Departmental approval*

This course covers linear, quadratic, polynomial, rational, exponential, and logarithmic functions. In addition, students study complex numbers, radicals, and systems of equations and matrices. To be successful, students must be able to analyze functions numerically, symbolically, and graphically. The numeric and graphing features of the graphing calculator are used to explore and extend the skills and concepts covered. As students move through the curriculum, they see concepts and problems that are related to questions on the SAT. Students are required to have a graphing calculator.

Precalculus/ Trigonometry

Grade 11; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisites: Successful completion of Algebra 2 and Geometry

Precalculus is an introduction to the language and concepts of Calculus. Student understanding of functional analysis will be extended within the study of polynomial, rational, exponential, logarithmic, and trigonometric functions. Students will be looking at these functions from a numeric, algebraic, and graphic standpoint. As students move through the curriculum, they see concepts and problems that are related to questions on the SAT.

Honors Precalculus/Trigonometry

Grade 11; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: B or better in Honors Algebra 2/Trig, Departmental approval

Honors Precalculus/Trigonometry is a thorough preparation for Honors Calculus. In this course, functional analysis will be stressed. Topics include polynomial, exponential, logarithmic, trigonometric functions, and conic sections. The year concludes with a unit of study on Limits and Continuity. Students are required to have a graphing calculator. As students move through the curriculum, they see concepts and problems that are related to questions on the SAT. The numeric, graphing, and other features of the graphing calculator are used to explore and extend the skills and concepts covered.

AP PreCalculus

Grade 10-12; Full-year course; 1 credit. ***NCAA Approved.***

Summer work required.

Prerequisite: A or better in Honors Geometry OR Honors Algebra II.

AP Precalculus is an engaging, rigorous course designed to prepare students for the full spectrum of college-level mathematics. Centered on modeling real-world phenomena, the course develops deep understanding of functions—including polynomial, rational, exponential, logarithmic, and trigonometric forms—and emphasizes interpreting, transforming, and connecting multiple representations. Students explore dynamic applications, build strong algebraic fluency, and learn to use mathematical tools to make sense of authentic problems across science, data, economics, and everyday contexts.

By the end of the course, students are equipped with the conceptual foundation and problem-solving mindset essential for success in calculus, STEM pathways, and advanced quantitative study.

Differential Calculus

Grade 12; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Successful completion of Precalculus

Differential Calculus begins with a review of linear, absolute value, non-linear, rational, and piecewise defined functions. Calculus topics include limits, derivatives, and applications of the derivative. A variety of real-life applications taken from fields such as business, life sciences, economics, and physics are used throughout this course. As students move through the curriculum, they see concepts and problems that are related to questions on the SAT.

Honors Calculus

Grade 12; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: B- or better in Honors Precalculus/Trigonometry, Departmental approval

In Honors Calculus, the theory of elementary functions and real-world applications of mathematics will be studied. Differential calculus and an introduction to integral calculus plus the applications of each will be explored. The course focuses on polynomial, rational, power, exponential, and logarithmic functions.

AP Calculus (AB)

Grades 11-12; Full-year course; 1 credit

Summer work is required. ***NCAA Approved.***

Prerequisites: A- or better in Honors Precalculus/Trigonometry/AP Pre Calc, Departmental approval

AP Calculus AB is a dynamic, college-level course that immerses students in the powerful ideas of differential and integral calculus. Through the study of limits, derivatives, integrals, and the Fundamental Theorem of Calculus, students learn to analyze change, accumulate quantities, and model complex real-world behavior with precision. The course emphasizes multiple representations—graphical, numeric, analytic, and verbal—so students build strong conceptual understanding alongside fluent procedural skills. From motion and optimization to area, volume, and differential equations, students apply calculus to compelling, authentic problems across science, engineering, and data-driven disciplines. By the end of the course, students are fully prepared for the AP Exam and for success in subsequent college-level mathematics. Juniors are required to take the AB level of the AP Exam or an AP-based final exam at year's end. Seniors may opt out of the AP exam.

AP Calculus (BC)

Grades 11-12; Full-year course; 1 credit. ***NCAA Approved.***

Prerequisites: Successful completion of AP Pre Calc, Departmental approval

AP Calculus BC is an accelerated, college-level course that extends and enriches the foundational ideas of differential and integral calculus. Building on all topics from AP Calculus AB, the course pushes further into advanced methods of integration, parametric and polar analysis, vector-valued functions, infinite sequences and series, and powerful convergence tests. Students deepen their understanding of change and accumulation while mastering sophisticated tools that unlock rich applications in physics, engineering, computer science, and data modeling. Emphasizing multiple representations—analytic, graphical, numeric, and verbal—the course cultivates strong conceptual insight and fluent problem-solving. By the end, students are equipped with a comprehensive calculus toolkit and poised for success in higher-level STEM coursework.Juniors are required to take the BC level of the AP Exam or an AP-based final exam at year's end. Seniors may opt out of the AP exam.

Honors Multivariable Calculus

Grade 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisites: Successful completion of AP Calculus AB/BC or concurrent enrollment in AP Calculus BC, successful completion of a full-year physics course, and departmental approval.

Multivariable Calculus is a full-year course in differential and integral calculus for vector-valued functions of several real variables. Topics include three-dimensional vector fields, partial and directional derivatives and their applications, and multiple integrals. Line and surface integrals (including Green's and Stoke's Theorems) are introduced. Students are required to have a graphing calculator. (TI-84 Plus is recommended.)

Statistical Reasoning in Sports

Grade 11, 12; elective; Spring, 1/2 credit. ***NCAA Approved.***

Prerequisite: Successful completion of Algebra II

This course explores the powerful intersection of data, performance, and teamwork in sports. Students will learn how statistical analysis drives strategy, informs decision making, and enhances athletic performance. Through real-world case studies and interactive projects, participants will apply data-driven methods to evaluate player efficiency, predict outcomes, and optimize team dynamics.

Using case studies from professional and collegiate sports, students will analyze player performance metrics, team efficiency, and game outcomes. The course emphasizes the use of statistical software and visualization tools to interpret results and communicate

insights effectively. By the end of the course, students will understand how statistical reasoning enhances decision-making in areas such as player scouting, injury prevention, game strategy, and sports analytics

Statistics and Financial Literacy

Grades 11-12; Full year course; 1 credit.

Prerequisite: *Successful completion of Algebra II.* ***NCAA Approved.***

Interpreting data and making informed financial decisions is something that no future citizen can avoid. We begin collecting and using data at very early ages to understand sports, business trends, and weather predictions. Financial decisions that we make early on in our lives can have positive and adverse effects on our quality of life as older adults. In this full year course, you will become critical consumers of data while learning how to leverage this data and other mathematical concepts to make informed financial decisions. Within these contexts, you will engage with the financial topics of taxes, bank accounts, budgeting, investing, credit, paying for college, and insurance by leveraging key mathematical concepts and skills from algebra, functions, modeling, correlation, probability, and descriptive and inferential statistics.

Honors Statistics

Grade 12, Elective; full-year course; 1 credit. ***NCAA Approved.***

Summer work is required.

Prerequisites: A- or better in Algebra II and in current math course. Students should be highly motivated and curious about the world of statistics.

Understanding and interpreting data are critical skills for 21st century learners. The Honors Statistics course will provide students with the requisite skills to navigate the sea of data in an organized and scholarly manner. Using an investigative approach to learning, the course will introduce and then develop a method of analyzing data with an emphasis on descriptive and inferential topics. Key concepts such as significance, generalization, and causation will be studied. Students will use technology tools to work with data sets drawn from various disciplines and also gather data using accepted and appropriate data collection methods.

AP Statistics

Grade 11, 12, Elective; full-year course; 1 credit. ***NCAA Approved.***

Summer work is required.

Prerequisites: Minimum 550 on both PSAT Math and PSAT Evidence-Based Reading & Writing, or minimum 600 on both SAT Math and SAT English; departmental approval

AP Statistics introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad

conceptual themes: 1) exploring data: describing patterns and departures from patterns; 2) sampling and experimentation: planning and conducting a study; 3) anticipating patterns: exploring random phenomena using probability and simulation; and 4) statistical inference: estimating population parameters and testing hypotheses. Students interested in AP Statistics should possess a strong work ethic, as substantial new vocabulary and calculator procedures will be introduced; the ability to work collaboratively as well as independently; and a desire to master the AP curriculum to succeed on the AP examination in May. Juniors are required to take the AP Exam or an AP-based final exam at year's end. Seniors may opt out of the AP exam.

COURSE OFFERINGS: SCIENCE

Interim Department Chair: Kasia Garbacz (kgarbacz@sch.org)

The Science Department at Springside Chestnut Hill Academy provides a rigorous, challenging, and exciting program for all students during each year in Upper School. Courses provide students with opportunities for using the most up-to-date equipment and technologies as they ask questions, design experiments, explore, collaborate, and become efficient and effective problem solvers. Students utilize a variety of sources, including, primary sources, computer probes, and on-line data and image resources, that allow them to access the same information as research scientists in critically analyzing and explaining scientific principles and phenomena. Students effectively synthesize information and creatively present what they have learned from their individually designed projects. Many of the course materials and activities are designed and/or assembled by the SCH Science Department in order to enhance and supplement available materials. Teachers are guided by the Next Generation Science Standards, PA Science Standards, the National Science Teachers' Association, and local curricular materials.

AP courses are taught to the specific AP curriculum and will prepare the students for the AP examinations.

Electives in the 10th, 11th, and 12th grades that are offered on a semester basis may be selected separately.

Physics

Grade 9; required; full-year course; 1 credit. ***NCAA Approved.***

Students in Physics learn to ask their own questions about a topic and how to go about solving that problem using an active, laboratory-based approach to the understanding of matter and energy and the laws that govern their interactions. Students explore and learn physical concepts and ideas through experimentation and observation, often with the aid of computer-based lab interface equipment. Students frequently work in teams applying engineering design principles and problem-solving skills to design, build, and experiment. Many units culminate in a design-based, real-world challenge project. Importantly, students apply their developing math skills to solve algebraic equations

related to each principle covered. Where applicable, new math techniques will be introduced to assist in deeper understanding of concepts. The course is also designed to develop an appreciation for physics as it applies to everyday life.

Honors Physics

Grade 9; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval

Students in Honors Physics learn to ask their own questions about a topic and how to go about solving that problem, using an active, laboratory-based approach to the understanding of matter and energy and the laws that govern their interactions. Problem solving and analysis are emphasized, but the course is also designed to develop an appreciation for physics as it applies to everyday life. Students explore and learn physical concepts and ideas through experimentation and observation, often with the aid of computer-based lab interface equipment. Students learn to ask their own questions about a topic and how to go about solving that problem. Students frequently work in teams applying engineering design principles and problem-solving skills to design, build, and experiment. Many units culminate in a design-based, real-world challenge project. Importantly, students apply their developing math skills to solve algebraic equations related to each principle covered. Where applicable, new math techniques will be introduced to assist in deeper understanding of concepts. All students design and complete an independent research project, which they will enter in the PJAS (Pennsylvania Junior Academy of Science) competition.

Chemistry

Grade 10; required; full-year course; 1 credit. ***NCAA Approved.***

This course provides a background in basic chemical concepts while enabling students to use their chemical knowledge to explore some of today's relevant problems and make informed decisions about personal and societal issues. It places less emphasis on the mathematical and analytical aspects of abstract problem solving than Honors Chemistry. It covers a wide sampling of the range of modern chemistry, including inorganic, organic, environmental, industrial, and biochemistry. It will provide an introduction to the experimental study of chemistry and the theoretical concepts of structure, bonding, energy, and reactions. The course stresses laboratory skills including observing, looking for regularities, collecting data, developing conclusions, and using standard laboratory equipment.

Honors Chemistry

Grade 10; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Departmental approval

This Honors course is geared to students with strong mathematical and analytical skills. The course provides an introduction to the experimental study of chemistry and the theoretical concepts of structure, bonding, energy, and reactions in a more traditional

format. Topics include atomic theory, chemical reactions, solutions, kinetics, thermodynamics, equilibrium, and electrochemistry. Laboratory skills are stressed. These include observing, looking for regularities, collecting data, developing conclusions, and using standard laboratory equipment. Students in Students in Honors Chemistry cover more topics and in greater depth, and move at a faster rate than Chemistry students. Students are selected into the Honors Chemistry section by the Science Department based upon their achievement in 9th grade Physics, their achievement in math, and their successful meeting of the criteria outlined in Criteria for Placement in Honors Science in Upper School.

Biology

Grade 11; required; full-year course; 1 credit. ***NCAA Approved.***

This course introduces students to the fundamental topics in biology as well as those on the cutting edge of science, providing a solid background, the most current information, and personal relevance to the student. This course builds upon the major concepts introduced in Physics and Chemistry. Students learn to gather and critically analyze information from many resources, including web-based bioinformatics sites, scientific journals, and their own peers. Topics covered include environmental science; biochemistry; cell biology; energy flow; animal and plant reproduction and development; molecular, classical, and human genetics; biotechnology, including genetic engineering and PCR; evolution and taxonomy; and how the body fights disease. Students design, investigate, and analyze many of their own experiments using college-level equipment, including micropipettes, electronic balances, microscopes with digital cameras, gel electrophoresis, and PCR and microcentrifuges. Our unique approach to biology education is highlighted by topics and activities that help students develop into critical thinkers and thoughtful members of our world community. These include environmental justice and disparities in health; inequalities in cancer rates and treatment; designing a healthy fast food meal to meet the nutritional needs of their celebrity client, bioethical case studies involving stem cells and reproductive technologies; sex verification of athletes; and the study of what makes us each unique in analyzing genetics, evolution and the biology of race. The surrounding Wissahickon natural area provides local, tangible, working laboratory examples to enhance and clarify concepts that are often abstract or global in their nature.

Honors Biology

Grade 11; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: departmental approval

This Honors course introduces students to the fundamental topics in biology as well as those on the cutting edge of science, providing a solid background, the most current information, and personal relevance to the student. This course builds upon the major concepts introduced in Physics and Chemistry. Students learn to gather and critically analyze information from many resources, including web-based bioinformatics sites, scientific journals, and their own peers. Topics covered include environmental science; biochemistry; cell biology; energy flow; animal and plant reproduction and development;

molecular, classical, and human genetics; biotechnology, including genetic engineering and PCR; evolution and taxonomy; and how the body fights disease. Students design, investigate, and analyze many of their own experiments using college-level equipment, including micropipettes, electronic balances, microscopes with digital cameras, gel electrophoresis, and PCR and microcentrifuges. Our unique approach to biology education is highlighted by topics and activities that help students develop into critical thinkers and thoughtful members of our world community. These include environmental justice and disparities in health; inequalities in cancer rates and treatment; designing a healthy fast food meal that meets the nutritional needs of their celebrity client, bioethical case studies involving stem cells and reproductive technologies; sex verification of athletes; and the study of what makes us each unique in analyzing genetics, evolution and the biology of race. The surrounding Wissahickon natural area provides a local, tangible, working laboratory to enhance and clarify concepts that are often abstract or global in their nature. Students in Honors Biology cover topics in more depth, move at a faster rate, and research and design a long-term, independent, experimental research project, which is entered in the local George Washington Carver Science Fair and the regional Delaware Valley Science Fair. Students are selected into the Honors Biology section by the Science Department based upon their achievement in 10th grade Chemistry, along with successfully meeting criteria outlined in Criteria for Placement in Honors Science in Upper School.

Environmental Science

Grades 10–12; elective; fall semester; ½ credit. ***NCAA Approved.***

This one-semester course focuses on human ecology (humans and ecosystems); the human population and global problems; pollution, with special emphasis on local environmental concerns; and the politics, economics, and ethics surrounding societal and environmental issues. Lab activities will include extensive fieldwork in the Wissahickon natural areas around the school, such as calculating the amount of carbon dioxide SCH campus trees sequester annually; identifying and researching local medicinal plants; and conducting monthly assays of biodiversity around school and at home to observe how the world around us changes with the seasons. We will venture into SCH's green areas to tally invasive species, collecting invasive spotted lanternflies as we go; students will research, design, and test ways to attract lanternflies to reduce their numbers. Students will evaluate their everyday lives to quantify their impact on the planet and discuss methods of reducing their carbon footprint. The class will have visits from expert scientists including nuclear engineers, geologists, conservation biologists, beekeepers, and, of course, environmental scientists. The class culminates in a field trip to Island Beach State Park, NJ, where we will learn about vulnerable ecosystems and indicator species while collecting beach water, sand, and debris samples. A microplastics lab accompanies this trip. In this lab, students tally microplastics using various methods: dissection of marine organisms, chemical isolation, and microscopic inspection of food, beach samples, and everyday products.

Oceanography

Grades 10–12; elective; fall semester; ½ credit. ***NCAA Approved.***

Oceanography is an interdisciplinary science course that asks students to explore the physical, biological, and societal aspects of the ocean and the hydrosphere. Topics will include interactions between the biosphere, atmosphere, and lithosphere in the world's oceans; marine geology and sediments; salinity and other aspects of ocean water chemistry; currents and other methods of ocean water circulation; waves and water dynamics; coastal processes; causes and effects of tides; marine biology, biodiversity, and sustainability; ecology of oceans; and the impact of humans. The majority of the students' class time will be used for inquiry-based activities, while class lectures (in the form of podcasts) and readings will be reserved as homework. As part of their coastal processes unit, the class will take a full-day field trip to Island Beach State Park in Seaside Heights, NJ. Using resources from The Blue Ocean Institute and Whole Foods we will learn where the fish that we eat comes from and how we can make choices as consumers that will promote sustainable fisheries and healthier ocean habitats. The unit will culminate with a sustainable fresh fish feast!

Forensic Science

Grades 10–12; elective; spring semester; ½ credit. ***NCAA Approved.***

This interdisciplinary course deals with the application of the scientific principles of biology, chemistry, and physics in evaluating the physical evidence found at crime scenes. Topics will include drug testing; blood, fingerprint, and document analysis; arson and explosives; firearm identification; DNA profiling; forensic anthropology and autopsies; forensic technology and encryption; and forensic engineering. Students will explore how investigators use instrumentation such as spectrophotometers, gel electrophoresis, acoustical fingerprinting, and image processing to solve crimes. The course will make extensive use of database searches and "wet" labs in order to gain firsthand experience analyzing simulated samples of physical evidence. Extensive connections are made to real-life case studies, including historical cases like the analysis and identification of the remains of Czarina Anastasia Romanov and the kidnapping of the Lindbergh baby. Contemporary case studies are highlighted by the forensic experts who visit the course. These have included an anthropologist, an arson investigation specialist from the Philadelphia Police Department, a forensic toxicologist, and an FBI special agent.

AP Biology

Grades 11, 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisites: Biology, Chemistry, and departmental approval

The Advanced Placement Biology course is the equivalent of a first-year college biology course and is geared toward students with a particular interest in biology and who have demonstrated a willingness and ability to commit considerable time to studying and completing assignments outside of class. The goals of the course include helping students gain a conceptual framework for modern biology, helping students gain an appreciation of science as a process, and helping prepare students for the rigors of a college-level science course. These are accomplished through extensive text and journal

readings; using web-based databases, bioinformatics tools and simulations; and student-designed laboratory investigations utilizing the most up-to-date techniques and technologies. These include micropipettes, electronic balances, microscopes with digital cameras, gel electrophoresis and PCR, microcentrifuges and CRISPR. Students are expected to study beyond what they would for a typical course each night and attend extra sessions outside of class time several times each semester. Given the speed with which scientific discoveries and research continuously expand scientific knowledge, this course focuses on big ideas, consisting of enduring, conceptual understandings and the content that supports them. This enables students to spend less time on factual recall and more time on inquiry-based learning of essential concepts that will help them develop the reasoning skills necessary to engage in the science practices used throughout their study of AP Biology and advanced topics in subsequent college courses.

Students must complete approximately six hours of summer work in order to be adequately prepared to start the year with a solid knowledge of ecology. Students will be required to take and satisfactorily complete a cumulative examination at the end of the course that simulates the AP examination. Students are also strongly encouraged to take the national Advanced Placement examination in AP Biology.

AP Chemistry

Grades 11, 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Chemistry Honors and departmental approval

This course covers the equivalent of one full year of college-level general chemistry, comparable to a first-year science major's course at a college or university. The course is a rigorous math-based course, with a strong laboratory component. It is intended for students who have demonstrated a willingness to commit considerable time to studying and completing assignments outside of class, and who have successfully completed a prior course in chemistry during high school.

The course will develop the students' ability to incorporate mathematical skills in the solution of chemistry problems, both through the use of problems and laboratory activities. Significant emphasis will be placed on developing the students' ability to solve problems through dimensional analysis and estimation. Students will be required to do extensive writing and to keep a thorough and accurate ongoing laboratory notebook. The AP Chemistry course provides students with a foundation to support future advanced coursework in chemistry. Through inquiry-based learning, students develop critical-thinking and reasoning skills. Students cultivate their understanding of chemistry and science practices as they explore topics such as atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics, and equilibrium.

Students must complete approximately **six hours of summer work** in order to be adequately prepared to start the year with a solid knowledge of basic chemistry. Students will be required to take and satisfactorily complete a cumulative examination at the end of the course that simulates the AP examination. Students are also strongly encouraged to take the national Advanced Placement examination in AP Chemistry.

AP Physics C: Mechanics

Grade 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisites: Physics and Calculus taken concurrently and departmental approval

This course is designed to prepare the student for the AP Physics C-level Advanced Placement examination in mechanics. It will cover thoroughly one half of the C-level syllabus, omitting the electricity and magnetism portion. The C-level program forms the first part of the college sequence that serves as the foundation in physics for students majoring in the physical sciences or engineering. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. Topics covered in mechanics are kinematics; Newton's laws of motion (including friction and centripetal force); work, energy, and power; linear and angular momentum; and gravitation and oscillations. Laboratory work will be done to assist in understanding the concepts of mechanics being studied.

Students must complete approximately six hours of summer work in order to be adequately prepared to start the year with a solid knowledge of basic Physics. Students will be required to take and satisfactorily complete a cumulative examination at the end of the course that simulates the AP examination. Students are also strongly encouraged to take the national Advanced Placement examination in AP Physics, C-level.

Honors Organic and Biochemistry

Grades 11, 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisites: Honors Chemistry or Chemistry (with an A or better) and departmental approval

This yearlong course will deepen your understanding of inorganic chemistry and also explore topics in organic chemistry and biochemistry. Among the themes to be studied in class are nuclear chemistry, intermolecular forces, polymers, acid and bases, reaction rates and equilibrium and redox reactions. These topics are covered as stand alone units or incorporated in the study of food chemistry and food safety, forensic chemistry including toxicology and environmental chemistry. Laboratory investigations explore the use of instrumentation to collect data in chemistry, including visible light spectrophotometers, gas chromatography, and polarimeters. During the spring semester, Chemistry 2 students have the opportunity to become teachers during a collaborative chemistry-based project with SCH's Middle and Lower School students. This project involves the development of multimedia lessons shared with the younger students. Classes in Chemistry 2 are highly discussion-based, and the laboratory portion will introduce techniques used in college-level courses.

Honors Human Physiology

Grade 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Honors Biology or Biology (with an A or better) and departmental approval

This course investigates the function and structure of the human body, in both health and disease. Students are exposed to the intricacies of their bodies at the molecular, cellular, and systems levels. In addition, the study of sports medicine, exercise physiology, and mind-body connections highlights the interdependence and adaptability of all body systems. Laboratory experiments designed and investigated by students provide them with a solid understanding of how their body functions and responds to its environment. Extensive use of computer-based probes helps students explore their own muscle grip strength and fatigue rate, EKGs, heart rate, and respiratory rate. Students are able to visualize and measure the inner workings of the human body using National Institutes of Health image-processing software. Current issues related to health and medicine, such as organ donation, drug addiction, performance enhancing drugs, and health care, are researched via peer reviewed primary source journal articles and discussed.

Pharmacology

Grades 11, 12; elective; fall semester; ½ credit. ***NCAA Approved.***

In this semester-long course, students develop an understanding of drugs as preventive, diagnostic, and therapeutic agents. Topics include the mechanism of action, side effects, drug interactions, and contraindications of a wide spectrum of drugs used in primary care practice. Lab investigations include the analysis of aspirin formulations; the effects of drugs on worm blood vessel size; and the examination of the effects of alcohol on fruit fly behavior. Other topics include an introduction to neuroscience emphasizing the molecular organization, chemistry, and physiology of the neuron, how neurons are organized into functional circuits, and how these functional circuits process information and control both normal and abnormal behavior. Students will also explore the biochemical and genetic basis of drug addiction and brain disorders, such as autism, depression, schizophrenia, and Parkinson's disease. Field trips include a visit to the Pennsylvania Hospital to see the first operating room in America, and to learn about the practice of medicine in the 18th and 19th centuries. Students also visit the Mütter Museum to learn how reference collections of different diseases and injuries continue to help physicians today.

Honors Astronomy

Grades 11, 12; grade 10 with departmental approval; elective; spring semester; ½ credit. ***NCAA Approved.***

Prerequisites: B in Honors Physics or A in Physics

Dive into the engaging and hands-on world of astronomical observation and data analysis in the semester-long Honors observational astronomy course. In addition to learning about optical and radio astronomy, you will build your own telescopes, collect real data remotely from observatories around the world and analyze this data, and investigate current topics in astronomical research. Topics covered include the electromagnetic spectrum, optics, optical and radio astronomy, current astronomical

research, space probes and missions, and astrobiology (the search for life beyond Earth). Observing fieldwork, field trips to local observatories, and guest speakers will round out this engaging and hands-on course.

Honors Astrophysics

Grades 11, 12; grade 10 with departmental approval; elective; fall semester; ½ credit. ***NCAA Approved.***

Prerequisite: B in Honors Physics or A in Physics

This semester-long course explores our universe by surveying introductory astronomy and astrophysics. The course is designed to engage students in the scientific process while fostering an appreciation for the majesty of our universe. Students will delve into the history of astronomy, size and scale of the universe, and observation and data collection techniques. Topics will include stars, planets, black holes, galaxies, orbital mechanics, and modern astrophysics and cosmology. The class will also include computer simulations, hands-on laboratory investigations, scientific debates, and independent research. To supplement our in-class learning, the course will have an observation component that will take place during evening observation sessions.

Psychology

Grades 11, 12; elective; spring semester; ½ credit. ***NCAA Approved.***

Psychology introduces students to the systematic and scientific study of human behavior and mental processes. While considering the psychologists and studies that have shaped the field, students explore and apply psychological theories, key concepts, and phenomena associated with such topics as the biological bases of behavior, sensation and perception, learning and cognition, motivation, developmental psychology, testing and individual differences, treatment of abnormal behavior, and social psychology. Throughout the course, students employ psychological research methods, including ethical considerations, as they use the scientific method, analyze bias, evaluate claims and evidence, and effectively communicate ideas.

Zoology

Grades 11, 12; elective; spring semester; ½ credit. ***NCAA Approved.***

Students will learn what makes animals, animals—from microzoology to blue whales, and almost everything in between! Labs include comparative dissections (first practicing on a fruit, using dissection instruments to perfectly skin a grape), investigating animal adaptations using simulations and board games, and observing native resident animals in the temperate deciduous forest surrounding SCH. We will battle animals" Pokemon-style" in a virtual arena, using research and public opinion to decide who wins each round and the entire "March Madness" tournament.Students will quantify how similar humans are to other species by utilizing comparative gene and protein databases operated by working scientists.We'll use the same DNA technology to solve a Madagascar lemur mystery! This course culminates in a field trip to the Philadelphia zoo

where students evaluate an exhibit of their choice, and a comparative analysis of animal behavior.

Honors Astrophysics Research

Grades 11-12; elective; full-year course; 1 credit

Prerequisite: Prior experience with an external science fair at the high school level (enrollment in Physics 9H or Bio 11H counts toward this requirement), Astrophysics prior or concurrent enrollment highly recommended, recommendation from a current science teacher.

The Honors Astrophysics Research elective brings students through a full scientific research process. The course emphasizes developing critical scientific skills, including formulating research questions, conducting literature reviews, designing experiments or studies, and analyzing data. As a course requirement, students must present their findings at a science competition, professional conference, or in a scientific journal. This course is ideal for self-motivated students with an interest in advancing their understanding of scientific research and contributing to real-world scientific knowledge.

COURSE OFFERINGS: WORLD LANGUAGES

Department Chair: Stephanie Kasten (skasten@sch.org)

The goal of the Upper School modern language program is to help students become proficient communicators in French, Spanish, and Chinese. Students are expected to speak, read, and write in the target languages every day and to learn by listening to others. We place emphasis on creating meaningful contexts for acquiring grammar and vocabulary in each language through use of authentic materials and cultural elements from the regions in which these languages are spoken.

The goal of our Upper School Latin program is to help students become competent readers and translators of Latin. This involves a close study of the grammatical structures of Latin and of English. Students learn forms, sentence structure, syntax and vocabulary through the translation of both Latin into English and English into Latin in order to master the subtlety of usage. Original Latin texts and secondary readings provide an understanding of the historical and cultural world of the Romans.

In the modern languages, we evaluate students' oral and aural proficiency, as well as their ability to read and write, through a wide variety of performance tasks. In Latin, we evaluate students' mastery of grammatical concepts and vocabulary in conjunction with their ability to read, through tests, quizzes, in-class translations and projects.

Language: Levels 1–3 (required courses)

Throughout these levels, students work on developing the speaking, listening, reading, and writing skills that will provide a solid foundation for more advanced work. In any language, in order to continue from level 1 to level 2, and from level 2 to level 3, a student must attain a

minimum grade of C for the year. A student who does not earn this minimum grade will be required to complete a summer course of study.

Chinese 1

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

This course will be offered when there is sufficient enrollment.

Chinese 1 serves as an introduction to Chinese using three modes: interpretive (reading, listening), interpersonal (speaking, listening, writing), and presentational (writing, speaking). Students become familiar with Mandarin Chinese pronunciation, and they learn to speak using the four tones. Students learn to read and write using both romanized Chinese (Hanyu Pinyin) and simplified Chinese characters, and they learn to type Chinese characters on both cell phones and computers. Approximately equal emphasis is placed on active recognition and production. The course is conducted primarily in Chinese, and students are expected to speak in the target language as often as possible. Students develop familiarity with basic Chinese vocabulary, grammar, and language structures. Additionally, students explore China and its culture through projects, readings, and discussions. At the end of the school year, students will be able to communicate on familiar topics using words and phrases they have practiced.

Chinese 2

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Chinese 1

Chinese 2 reviews and builds upon the interpretive, interpersonal, and presentational foundations established in Chinese 1. Approximately equal emphasis is placed on active recognition and production, and students are expected to work in simplified Chinese characters. The course is conducted mostly in Chinese, and students are encouraged to speak Chinese. Students continue to solidify and expand their skills in vocabulary, grammar, pronunciation, and language structures. Students pursue greater understanding of Chinese culture through projects, readings, and discussions, and they are encouraged to see language and culture as mutually influencing pieces. At the end of the school year, students are expected to be able to communicate and exchange information about topics they have studied, write short messages related to everyday life, and understand most of what they have heard and read on familiar topics.

Chinese 3

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Chinese 2

Chinese 3 challenges students to further develop their interpretive, interpersonal, and presentational skills with the Chinese language. Students are expected to be able to comfortably use familiar Chinese sentence patterns and vocabulary to interact with others. Students read, write, and type in simplified Chinese characters. The course is

conducted primarily in Chinese, and students are expected to speak mostly in the target language. Students build on their previous Chinese learning to solidify and expand their skills in vocabulary, grammar, pronunciation, and language structures. Students explore the complex interplay between language and culture, and they deepen their understanding of both through projects, readings, and discussions. At the end of the school year, students should be able to participate in conversations on familiar topics and handle short social interactions in everyday situations, write on a variety of familiar topics, and understand the main idea of texts and presentations on a range of topics related to everyday life and personal interests or studies.

French 1

Grades 9, 10; full-year course; 1 credit. ***NCAA Approved.***

This course will be offered when there is sufficient enrollment.

French Course Descriptions based on Performance Descriptors for Language Learners, as well as NCSSFL-ACTFL 2017 Can-Do Proficiency Benchmark Indicators.

Intercultural communication skills are core to language acquisition. Students want to learn French in order to communicate effectively and respectfully with the people in the French and Francophone world. In French 1, students practice interacting at a survival level in some familiar everyday contexts and learn to identify products and practices in their own and other cultures to help them understand perspectives. Throughout the year, students engage in tasks that support their learning targets. To examine perspectives, and in order to communicate in different contexts, all French students practice in three modes. By the end of French 1, students should be able to show evidence of level proficient performance in each of the three modes described below.

While engaged in the Interpretive Mode (reading and listening), students identify the general topic and some basic information in both very familiar and everyday contexts by recognizing practiced or memorized words, phrases, and simple sentences in texts that are spoken or written. Interacting in the Interpersonal Mode (person-to-person), students communicate in spontaneous spoken or written conversations on both very familiar and everyday topics, using a variety of practiced or memorized words, phrases, simple sentences, and questions. Taking center stage in the Presentational Mode (speaking and writing), students present information on both very familiar and everyday topics using a variety of practiced or memorized words, phrases, and simple sentences through spoken, or written language.

French 2

Grades 9, 10; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: French 1

French Course Descriptions based on Performance Descriptors for Language Learners, as well as NCSSFL-ACTFL 2017 Can-Do Proficiency Benchmark Indicators.

Intercultural Communication Skills are core to language acquisition. Students want to learn French in order to communicate effectively and respectfully with the people in the French and Francophone world. In French 2, students begin to interact at a basic functional level in some familiar contexts. Students also begin to make comparisons between products and practices in their own and other cultures to help them understand perspectives. Throughout the year, students engage in tasks that support their learning targets. To examine perspectives, and in order to communicate in different contexts, all French students practice in three modes. By the end of French 2, all students should be able to show evidence of level proficient performance. Some will also show consistent performance at or above the highest targeted benchmark in each of the three modes described below.

While engaged in the Interpretive Mode (reading and listening), students identify the topic and related information from simple sentences in short texts and conversations. Interacting in the Interpersonal Mode (person-to-person), students request and provide information in conversations on familiar topics to meet their basic need in familiar situations by creating simple sentences and asking appropriate follow-up questions. Students also express, ask about, and react with some details to preferences, feelings, or opinions on familiar topics by creating simple sentences and asking appropriate follow-up questions. Taking center stage in the Presentational Mode (speaking and writing), students present personal information about their lives, activities and events as well as express preferences on familiar and everyday topics using simple sentences.

French 3

Grades 10, 11; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: French 2

French Course Descriptions based on Performance Descriptors for Language Learners, as well as NCSSFL-ACTFL 2017 Can-Do Proficiency Benchmark Indicators.

Intercultural Communication Skills are core to language acquisition. Students want to learn French in order to communicate effectively and respectfully with the people in the French and Francophone world. In French 3 students interact at a functional level in some familiar contexts. French 3 students make comparisons between products and practices in their own and other cultures to help them understand perspectives. Throughout the year, students engage in tasks that support their learning targets. To examine perspectives, and in order to communicate in different contexts, all French students practice in three modes. By the end of French 3, students should be able to show evidence of level proficient performance in each of the three modes described below.

While engaged in the Interpretive Mode (reading and listening), students identify and understand the main idea and key information in short straightforward fictional and informational texts and conversations. Interacting in the Interpersonal Mode (person-to-person), students exchange information and negotiate meaning in conversations with others on familiar topics and some researched topics, creating

sentences and series of sentences and asking a variety of follow-up questions to meet their needs. Students also exchange preferences, feelings, or opinions and provide basic advice on a variety of familiar topics, creating sentences and series of sentences and asking a variety of follow-up questions. Taking center stage in the Presentational Mode (speaking and writing), students tell stories about their lives, activities, events and other social experiences, using sentences and series of connected sentences. Students are now able to state their viewpoint about familiar topics and give some reasons to support it, using sentences and series of connected sentences. Students can also give straightforward presentations on a variety of familiar topics and some concrete topics they have researched, using sentences and series of connected sentences.

Latin 1

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

This course will be offered when there is sufficient enrollment.

This course is designed to introduce students to the forms and functions of nouns and verbs and to develop basic translation skills. Students will learn about ancient Roman culture through reading stories written in Latin and through various projects that will augment their language study.

Latin 2

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Latin 1

This course is designed to allow students, building on elements of basic grammar, vocabulary, and cultural competency explored in Latin 1, to approach the Latin language through the development of fluid reading skills along with grammatical understanding. Projects throughout the year will provide students with opportunities to augment linguistic and cultural literacy in various formats.

Latin 3

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Latin 2

This course is designed to allow students, building on basic grammar, vocabulary, and cultural competency, to explore the Latin language through the development of fluid reading skills along with the understanding of increasingly complex grammatical constructions. Students will begin reading authentic texts of various authors throughout the year to receive an introduction to a diverse set of genres. Projects throughout the year will provide students with opportunities to augment linguistic and cultural literacy in various formats.

Spanish 1

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

This is a beginning Spanish course intended for students entering SCH Academy at the 9th grade level who either have had no Spanish or whose background in Spanish is not sufficient to qualify them for a more advanced course. It is also open to students who did not study Spanish in our Middle Schools. This course will introduce students to pronunciation, spelling, verb systems, and basic vocabulary. We will lay the foundation for all four language skills: listening, speaking, reading, and writing. Constant practice in pronunciation and intonation will be accompanied by written exercises to promote a gradual acquisition of basic skills in reading and writing Spanish. We will place emphasis on speaking and on developing a solid foundation of grammar and vocabulary to support it. Cultural and geographic highlights of Spanish-speaking countries are introduced throughout the year. This class is conducted primarily in Spanish.

Spanish 2

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Spanish 1

In this course, students review and build upon the basic grammar, vocabulary, and structures learned in previous years. Students begin to interact at a basic functional level, since we emphasize oral and written production in order to effectively communicate at their level in different contexts. Throughout the year, students engage in tasks that support their learning targets, such as expressing their preferences, feelings or opinions on familiar topics. Students are also exposed to particular topics of Spanish-speaking countries, in order to start developing an appreciation and understanding of Latin and Spanish cultures. This class is conducted almost entirely in Spanish and students are expected to communicate in Spanish.

Spanish 3

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Spanish 2

In this course, students continue to develop cultural and communicative competencies through vocabulary building, conversational practice, and grammatical review. Students will expand, in depth and breadth, their reading, speaking, listening, and writing proficiencies in the target language. This course is taught almost exclusively in Spanish, and students are expected to communicate in Spanish.

Honors Language Courses

In Honors courses, students are expected to speak, listen, read, and write consistently at or above the high end of the target proficiency scale for their level, as well as to master more content. As appropriate for each Honors course, students will demonstrate their command of the language through formal presentations and unrehearsed conversation, research and reports, and interpretation of authentic texts. At this level, students are expected to use the target language competently and confidently at all times. In order to be recommended for an Honors course from a CP course, students must have demonstrated the willingness and ability to do the

above and their grades must be solidly in the A range throughout the entire year. They must also have the approval of the department chair. Once placed in an Honors course, students must maintain a B+ average to remain in the Honors track and must have the approval of the department chair.

Honors Chinese 3

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Chinese 2; Department approval for Honors

Chinese 3 Honors challenges students to further develop their interpretive, interpersonal, and presentational skills with the Chinese language. Students are expected to be able to comfortably use a wide variety of familiar Chinese sentence patterns and vocabulary to interact with others. Students read, write, and type in simplified Chinese characters. The course is conducted almost entirely in Chinese, and students are expected to speak in the target language. Students build on their previous Chinese learning to solidify and expand their skills in vocabulary, grammar, pronunciation, and language structures. Students explore the complex interplay between language and culture, and they deepen their understanding of both through projects, readings, and discussions. At the end of the school year, students are expected to be able to participate in conversations on a wide variety of familiar topics and handle short social interactions in everyday situations, write to express their opinions, and understand texts and presentations on a range of topics related to everyday life and personal interests or studies.

Honors Chinese 4

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Chinese 3H; Department approval for Honors

Chinese 4 Honors continues to develop and challenge students' interpretive, interpersonal, and presentational skills with the Chinese language. The course is conducted entirely in Chinese, and students are expected to speak in the target language. In addition to continuously solidifying and expanding their skills in advanced vocabulary and grammatical structures, students will read, analyze, and discuss a variety of literary texts. At the end of the school year, students are expected to be able to communicate information confidently, understand the main idea and a few details, make presentations, and express their thoughts on a wide variety of familiar topics related to everyday life and personal interests and studies using sentences and series of connected sentences through spoken or written language. Students are beginning to handle and negotiate meaning even in unfamiliar or unexpected situations.

Honors French 3

Grades 10, 11; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: French 2; Departmental approval for Honors

In the Honors section for French 3, students have the added challenge and framework to consistently perform at or above the highest targeted proficiency benchmark for level 3 in all three modes. Students are asked to complete tasks that require them to express themselves using a wider variety of details, supporting evidence, and more complex language functions related to familiar topics. Students will perform at the high target range at a fast pace so they may spend the last quarter of the year reading, interpreting, and unpacking the French novel, Le Petit Prince.

Honors French 4

Grades 11, 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: French 3H, Departmental approval for Honors

The Honors section of French 4 further develops students' skills in reading, writing, listening, and speaking. In addition to learning advanced vocabulary and grammatical structures, students will read, analyze, and discuss a variety of literary and historical texts. Assessments, in addition to tests and quizzes, will include online and in-class presentations and projects. In order to gain departmental approval for enrollment in this course, students must previously have demonstrated satisfactory development of all four language skills, as well as the ability to work both independently and in groups. This course helps students refine and strengthen the skills they need in order to move into the Advanced Placement course the following year.

Honors Latin 3

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Latin 2, departmental approval for Honors

This course is designed to allow students, building on basic grammar, vocabulary, and cultural competency, to explore the Latin language through the development of fluid reading skills that allow students to read with insight and precision. This course will also introduce students to increasingly complex grammatical constructions and variation of usage. Students will concentrate on authentic texts of various authors throughout the year to receive an introduction to a diverse set of genres. Projects throughout the year will provide students with opportunities to augment linguistic and cultural literacy in various formats.

Honors Latin 4

Grades 9–12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Latin 3H, departmental approval for Honors

This course is designed to allow students to explore the arts of oratory, prose, and poetry through selections from the body of authentic Latin texts. Building on a solid grammatical foundation, students will begin to grapple with the complexity of language with which each author cultivates his audience. Students will build vocabulary and

cultural competency while further developing fluid reading skills. Projects throughout the year will provide students with opportunities to augment linguistic and cultural literacy in various formats.

Honors Latin 5

Grades 11–12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Latin 4H, departmental approval for Honors

This course is designed to allow students to augment their exposure to a variety of ancient authors and genres, including authentic texts of oratory, prose, and poetry. Building on a solid grammatical foundation, students will grapple with the complexity of language with which each author cultivates his audience. Students will build vocabulary and cultural competency while further developing fluid reading skills along with an understanding of grammatical nuances through the study of Latin syntax in the hands of master writers. Projects throughout the year will provide students with opportunities to augment linguistic and cultural literacy in various formats.

Honors Spanish 3

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Spanish 2, departmental approval for Honors

In this engaging course, students will continue to develop cultural and communicative competencies through vocabulary building, conversational practice, and grammatical review. Students will enhance reading, speaking, listening, and writing proficiencies by constructing essays and communicating exclusively in Spanish. Spanish 3 Honors aims to engage students in their interests and passions through a wide variety of performance tasks, including interpersonal, presentational, and interpretive modes. The learning goals of this course are based upon the World Readiness Standards for language learners. The course curriculum is directly aligned to the following Spanish Advanced Placement themes: global challenges, science and technology, contemporary life, personal and public identities, families and communities, and beauty and aesthetics. Students will demonstrate their command of the language and knowledge of the Spanish Advanced Placement themes through formal presentations and informal conversation, research reports, and expository essays. Additionally, students will read and listen to authentic resources through multiple media. At this level, students are expected to use the target language competently and confidently at all times. This course is taught exclusively in Spanish.

Honors Spanish 4

Grades 9–12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Spanish 3H, departmental approval for Honors

In this course, students are expected to fully engage on a daily basis and enhance their cultural and communicative competencies through vocabulary building, conversational

practice, and grammatical review. Spanish 4 Honors aims to engage students in their interests and passions through a wide variety of performance tasks, including interpersonal, presentational, and interpretive modes. The learning goals of this course are based upon the World Readiness Standards for language learners. Through these goals, students will establish global competence for their future endeavors and life experiences beyond our campus. The course curriculum is directly aligned to the following Spanish Advanced Placement themes: global challenges, science and technology, contemporary life, personal and public identities, families and communities, and beauty and aesthetics. Students will demonstrate their command of the language and knowledge of the Advanced Placement themes through formal and informal presentations and informal conversation. Students will also research and write expository, informative, and persuasive essays. Additionally, students will read and listen to authentic resources through multiple media. At this level, students are expected to use the target language competently and confidently at all times. This course is taught exclusively in Spanish.

Language: Levels 4–5 (elective courses College Placement level)

Having elected to continue beyond the third level, a student will be expected to demonstrate a genuine interest and aptitude in language study. In order to successfully complete level 4 and level 5 courses, a student must have built a satisfactory foundation and have demonstrated a willingness to exert serious effort.

Chinese 4

Grades 9–12; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Chinese 3

Chinese 4 continues to develop and challenge students' interpretive, interpersonal, and presentational skills with the Chinese language. This course is taught exclusively in Chinese, and students are expected to communicate in the target language. In addition to continuously improving and solidifying their skills in vocabulary and grammatical structures, students will read and study a variety of literary texts. Students explore the complex interplay between language and culture, and they deepen their understanding of both through projects, readings, and discussions. At the end of the school year, students are expected to be able to participate in conversations on a wide variety of familiar topics and handle short social interactions in everyday situations, write to express their opinions, and understand the main idea of texts and presentations on a range of topics related to everyday life and personal interests or studies.

Chinese 5

Grade 12; elective; full-year course; 1 credit

Prerequisite: Chinese 4

This course continues the balanced approach to the study of Chinese language, literature, and culture. Students will have a thorough review of grammar, and continue to

develop their skills by reading in various genres using authentic materials, watching films, having class discussions, and practicing writing in formal and informal formats. This course is conducted exclusively in Chinese.

French 4

Grades 11, 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: French 3

This course will concentrate on improving the students' command of spoken and written French as well as developing reading skills. Students will study a variety of Francophone writers in various genres, including short stories, newspaper articles, and poetry. Students will gain insight into French culture and history through readings, films, and discussions. This course is taught exclusively in French, and students are expected to communicate in French.

French 5

Grade 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: French 4

This course continues the balanced approach to the study of French language, literature, and culture. It is designed to provide students with a thorough review of grammar and a comprehensive treatment of the readings, films, or plays studied. Students are expected to work actively at refining the four language skills of speaking, listening, reading, and writing. This course is conducted exclusively in French.

Latin 4

Grades 9–12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Latin 3

This course is designed to allow students to strengthen their foundation of grammatical understanding and to build vocabulary through further exposure to authentic texts. Students will have the opportunity to read both poetry and prose; significant emphasis will be placed on recognizing constructions within context, developing translation skills, and understanding classical themes reflected in ancient material. Projects throughout the year will provide students with opportunities to augment linguistic and cultural literacy in various formats.

Latin 5

Grades 9–12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Latin 4

This course is designed to allow students to augment their exposure to a variety of ancient authors and genres while continuing to strengthen their foundation of

grammatical understanding and to build vocabulary. Students will have the opportunity to read both poetry and prose and to reflect upon the culture in which their texts emerged; significant emphasis will be placed on recognizing the relationship between specific grammatical constructions and the meaning of the text within the context of the ancient world. Projects throughout the year will provide students with opportunities to augment linguistic and cultural literacy in various formats.

Spanish 4

Grades 9–12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Spanish 3

In this course, students continue to develop their communicative skills by speaking with other Spanish speakers, by writing, and through oral presentations. At this level, greater emphasis is placed on structural accuracy and ease in understanding spoken Spanish. Students will exchange and support opinions on a variety of topics related to contemporary and historical events, comprehend spoken and written Spanish texts from a variety of authentic sources, as well as produce compositions containing well-developed ideas on various topics. This course is taught exclusively in Spanish, and students are expected to communicate in Spanish.

Spanish 5

Grades 9–12; elective; full-year course; 1 credit

Prerequisite: Spanish 4

Students will improve their ability to use and understand Spanish in a variety of spoken and written contexts. They will refine their mastery of all the verb tenses and essential language structures while broadening vocabulary. They will read works of literature and periodicals, listen to native speakers, write, and practice speaking in varied formal and informal formats. This course is taught exclusively in Spanish.

Language: Levels 4–5 (elective Advanced Placement courses)

In order to continue into levels 4 and 5 in the Honors track, a student must have attained a minimum grade of B+ in the previous Honors course. Enrollment in an Advanced Placement course or an Honors course requires approval of the department chair.

AP Chinese 5

Grade 12; elective; full-year course; 1 credit.

Prerequisite: Chinese 4H, Departmental approval for AP

This course will allow students the opportunity to develop communicative and cultural competence in preparation for advanced study of Chinese at the college level. It emphasizes communication by applying interpersonal, interpretive, and presentational skills in real-life situations. It engages students in an exploration of culture in both

contemporary and historical contexts. The course develops students' awareness and appreciation of cultural products, practices, and perspectives. The course will train AP students to learn and develop critical thinking skills, as well as tackle and master difficult materials. Teachers and students use Chinese exclusively in this course.

AP French 5

Grade 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: French 4H, departmental approval for AP

This course will allow students the opportunity to develop communicative and cultural competence in preparation for advanced study of French at the college level. French and Francophone literature of various genres and from various periods will be studied in historical and cultural context. Students will use a variety of authentic periodical and literary texts as well as audio and video selections as the basis for writing and speaking on an array of topics, for improving their comprehension of both spoken and written French in various contexts, and for reviewing the more challenging aspects of French grammar. Teachers and students use French exclusively in this course.

AP Spanish 5

Grades 11, 12; elective; full-year course; 1 credit. ***NCAA Approved.***

Prerequisite: Spanish 4H, departmental approval for AP

In this course, students are expected to engage in increasingly complex and spontaneous oral interaction in which they demonstrate their understanding of the Spanish language. Spanish and Latin American literature of a variety of genres and periods will be studied in a cultural and historical context. Learning about strategies necessary to sustain and extend communication and training in the organization and writing of compositions are integral components of this course. Emphasis will be placed on refining students' mastery of sophisticated language structures and verb tenses. Teachers and students use Spanish exclusively in this course.