



Upper School Electives Course Catalog
Academic Year 2021-2022
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Language Arts

Advanced Creative Writing

(Grades 8-12)

This course incorporates reflection, imagination, sensory work, and the ability to address place, character, and conflict while crafting prose and poetry. Students will further develop their unique voice and style. The authors and poets we will read include Robert Frost, e.e. Cummings, Maya Angelou, William Wordsworth, Cormac McCarthy, Robert Louis Stevenson, Eudora Welty, and Julia Alvarez.

Film Studies

(Grades 8-12)

This course introduces students to the basics of film analysis, cinematic elements, genre, and narrative structure, helping students develop the skills to recognize, analyze, describe, and enjoy film as an art and entertainment form. The class includes weekly readings, screenings, occasional projects, and short writing assignments. Film choices will span genres, giving students exposure to both classic and modern works throughout cinema history.

Improvisation

(Grades 8-12)

Practice developing character, relationships, objectives and circumstances, within the fundamental rules of improvisation (yes/and; make your partner look good, violence kills the improv, etc.). We also study, as models, Nichols and May, Carl Reiner and Mel Brooks, and Groucho Marx.

Literature of the Theater

(Grades 8-12)

This course explores the works of various playwrights of the 20th and 21st centuries. Students explore, compare, and contrast characters from various plays, and examine how the changing times are reflected in the characters we watch on stage. Students also examine the ways in which various themes are explored by different playwrights in different time periods, as well as the ways in which the presentation of these themes are impacted by history. Students have the opportunity to write several analysis and compare/contrast pieces, direct and/or perform in selected scenes from works studied, design miniature sets to depict works studied, and attend a matinee production. By the end of the year, students have a better understanding of the elements of a production, and the craft of writing literature for the stage.

The Art of the Screenplay

(Grades 10-12)

Practice in the creation and revision of original screenplays and adaptations guided by study of narrative models provided by Fellini, Robert Towne, Akira Kurosawa, Stanley Kubrick, Steven Spielberg, Mel Brooks and many others. (*Purchase of FinalDraft screenplay formatting program strongly recommended for this course.*)

Science Fiction

(Grades 8-12)

We explore the most influential genre ever across film, literature, and television to gain a comprehensive understanding of what makes science fiction so appealing and widespread. We take time to analyze the social commentary of the pieces, and even learn how to write our very own science fiction short stories. This elective also helps to hone critical thinking and analytical skills as we critique various art forms that fall under the science fiction banner. Some films and books we may encounter: *The Matrix*, *The Fifth Season* by NK Jemisin, *The Twilight Zone*, and *Star Wars*.

Math

Mathematical Problem Solving

(Grades 8-12)

There are the math problems you can solve with a formula, and then there are the ones that require creativity and ingenuity. If you prefer the second kind, this is the class for you! By taking this class, you'll end up looking at mathematical problems in ways you probably never thought of before. We'll specifically look at problems from math competitions, of all levels, and you may even find yourself competing in one!

Number Theory

(Grades 8-12)

The natural numbers — one, two, three and so on — appear simple enough, but hide great complexity. How do we find all the pairs of square numbers that add up to other squares? Are there infinitely many prime numbers exactly two more than other primes? Number theory is the study of the often surprising patterns the natural numbers create. Beginning with the idea of divisibility, we will explore these patterns, both through examples and through proofs. We will also see applications of these ideas to cryptography, and may look into some extensions to abstract algebra as well.

History

Ancient Philosophy

(Grades 9-12)

Throughout the ancient world, many famous scientists, mathematicians, and even soldiers were also considered philosophers. What, exactly, is philosophy? Why was it so important to these ancient people? Why don't we hear much about philosophers today? This course will seek to answer those questions, and will cover historic philosophy from East and West: "Classical" Greece and Rome, Ancient India, Medieval China, and Feudal Japan.

Civics

(Grades 8-12)

Would you feel safe crossing a busy intersection if no one followed the law? What exactly are mom and dad voting for when they go mark their ballots in the secret voting booths? Why can't we all just get along? If you've asked yourself these questions, you're ready for a Civics class. Laws keep us safe, advance rights, and make our lives easier, but how exactly are laws made, and why do we obey some almost all of the time, like stopping at red lights, and others only sometimes, like speed limits? To learn more about how governments work and the mighty power you have in a democracy, sign up for Civics!

Classical History

(Grades 9-12)

Classical History is a rich topic that is studied in schools and universities around the world, often to a mixed reaction. In this course, students will understand why, and be able to identify key points of Classical culture and history that directly inform our lives today. We will be studying Mesopotamian, Egyptian, Roman, and Greek mythology as well as history, as to the people of the time, they were often the same.

History of Political Parties in the United States

(Grades 8-12)

Political parties are organizations which try to get their members elected to government positions in order to determine who gets what, when, and how. This course explores the origin and transformation of political parties throughout United States history. Students will analyze changes in political ideology and evaluate the role of parties in American democracy over time.

Human Geography

(Grades 8)

This course examines the patterns of where and how people live. Students will learn about world geography and its relation to human social organization and culture. Throughout the year, students will analyze the impacts of agriculture, industrialization, and urbanization on human history in various regions.

Ireland and the Irish Diaspora in America

(Grades 8-12)

Over 80 million people worldwide claim Irish descent as part of one of the most significant global diasporas in modern history. But how did such a seemingly small nation have such an enormous cultural and political impact on the United States? This course will explore the reasons why so many Irish decided to leave the land of their birth and start a new life in the United States. Students will critically discuss topics such as British imperialism, race, ethnicity, religion, politics, and culture by examining primary and secondary source material, literature, art, and, most importantly, music.

The Cold War and Civil Rights in America

(Grades 8-12)

This course explores the ways in which the Cold War and the fight for Civil Rights shaped the latter half of the 20th century and the 21st century in the United States. Students will engage in learning about topics ranging from the Civil Rights Movement, McCarthyism and HUAC, the Cuban Missile Crisis, the wars in Korea and Vietnam, The Black Power Movement and the Black Panthers, and the events leading to the end of the Cold War. This course will explore these topics using secondary and primary source material as well as music, film, and art to better understand the political, cultural, and social movements that occurred during this time.

Science

AP Environmental Science

(Grades 11-12; Prerequisites: Biology, Chemistry, and Algebra I)

AP Environmental Science is a course offered by the American College Board as part of the Advanced Placement Program to high school students interested in the environmental and natural sciences. This course is designed to provide students with scientific principles, concepts, and methodologies necessary to comprehend the relationships abundant within the natural world, to identify and analyze environmental problems, to evaluate relative risks associated with these identified problems, and to examine alternative solutions for resolving and/or preventing similar problems facing the global environment. This course runs for 1 full year and is credit-bearing. It can culminate in students taking the AP exam.

Food Science

(Grades 9-12; Prerequisite: Biology; Corequisite: Chemistry)

Food Science is a type of science that integrates the basic principles of biology, chemistry, and microbiology in the context of food and the food industry. Students will gain an understanding of how these principles apply to the composition of foods, nutrition of foods, food product development, and food safety and sanitation. Learning will involve hands-on experiences in order to encourage application to real-life situations. In addition, students will be encouraged to demonstrate their knowledge of the course content through scientific methods of investigation. This is a full year academic, credit-bearing course.

Forensic and Biomedical Sciences

(Grades 11-12; Prerequisites: Biology, Chemistry)

Forensic Science is the application of science (chemistry, physics, and biology) to the criminal and civil laws that are enforced by police agencies in a criminal justice system. It includes the investigation of fingerprinting, fiber analysis, ballistics, arson, trace evidence analysis, poisons, drugs, blood spatters, and blood samples. Students are taught the proper collection, preservation, and laboratory analysis of various samples. In biomedical science, students investigate various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. They determine the factors that led to the death of a fictional person, and investigate lifestyle choices and medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, medicine, and research processes, including immunology and vaccination, and organ transplant medicine. This course runs for one full year and is a credit-bearing course.

Introduction to Engineering

(Grades 11-12; Prerequisite: Physics and Algebra)

Engineering is the application of physical principles to problem solving in the material world. The process is messy, iterative, and sometimes perilous. In this elective, this problem-based learning course students will define a series of problems in mechanical, electrical, or optical engineering and determine how design can best solve these problems. Special attention will be given to the variables of space and resources in how these problems can be solved.

Marine Biology

(Grades 11-12; Prerequisites: Biology & Chemistry)

This course is a credit-bearing course that will explore several marine ecosystems and the living things that call them home. Students will dive deep into food chains, natural selection, and chemistry in order to understand the delicate balance between survival and extinction. We will explore the diversity of fishes. We will analyze how current environmental crises such as microplastics and climate change impact marine environments and the people who depend on them. Students will conduct lab work on water chemistry to learn how physical factors can impact biological populations. Students will also review the work of scientists in the field in order to gain a fuller understanding of the field of marine biology.

Computer Science

Programming I

(Grades 8-12)

An introduction to Computer Programming course for students interested in learning the basics of coding language (HTML, CSS, and JavaScript).

Programming II

(Grades 8-12)

Intermediate level programming course for students who are familiar with the basics of one or two common coding languages, have taken Programming I or its equivalent.

Programming III: Independent Study in Computer Science

(Grades 11-12)

Applied Engineering

Maker Space I

(Grades 8-12)

The Maker Space I course will consist of specific guided projects in woodworking, 3D printing, circuitry, constructing models, techniques of hand tools and project planning and development skills.

Maker Space II

(Grades 9-12)

The Maker Space II course will consist of separate units that aim to move the student from more prescribed, controlled projects to open-ended, self-initiated work. The majority of the year will be spent with the students doing self-guided work under close and careful instructor supervision.

World Languages

French 101

(Grades 12)

This course seeks to lay a foundation in the four skills of listening, speaking, reading, and writing. It also provides an introduction to a variety of francophone countries and their customs. The class is conducted mostly in French and emphasizes student participation. Students learn to communicate in simple French using basic vocabulary, idiomatic expressions. Students will get acquainted with the sounds, the pronunciation and the basic vocabulary of the French language. It also provides a basic knowledge and appreciation of the cultures of French-speaking countries, great historical and artistic figures as well as important milestones in French history.

Italian Advanced Grammar and Conversation

(Grades 12)

This class is open to students who successfully completed levels 1, 2, and 3 of Italian. Italian Conversation provides students with an advanced knowledge of modern spoken and written Italian. Students will have time to practice their conversational skills by discussing different readings, videos, and topics.

They will also be exposed to contemporary Italian life and civilization through the use of supplementary cultural materials and the media. More specifically, students will be able to talk and write about different topics by using the appropriate grammatical structure; interpret and understand oral and written dialogues/stories in the present, past, future, conditional, and subjunctive tenses; investigate similarities and differences between American and Italian cultures in different historical contexts; and they will be encouraged to apply the notions beyond the class by experiencing the several occasions that their environment offers to practice Italian language (such as Italian books and movies).

Italian 101

(Grades 12)

This course is dedicated to students who never took Italian before. Students will realize how language and culture are strictly correlated, and it is not possible to separate the structure of the language (such as grammar, through oral and written communication) from cultural elements (such as food, sports, art, movies, and music). Students will be constantly invited to share with their classmates and me what they learn in the classroom and outside of the school settings.

The course provides them with an introduction to modern spoken and written Italian. The students will practice the four basic skills of listening/comprehension, speaking, reading, and writing. They will be actively engaged in using the language by interacting with their classmates and teacher, and communicating about topics that are meaningful to them.

They will learn how to understand and use the language in different social situations, through games, dialogues, individual/group projects, and homework. They will be exposed to contemporary Italian life and civilization through the use of supplementary cultural materials and media.

Latin 101

(Grades 12)

The goal of this course is to introduce students to the Latin language and culture. Students will understand simple written Latin based on a variety of subjects and presented through different types of media. They will be able to compare the basic structures and vocabulary of Latin to that of other Romance languages and English. Students will develop an awareness of Roman culture through the study of perspectives, products, and practices, and understand how each is interrelated. There will be some emphasis on vocabulary building and the study of derivatives in

English as well as exploring the mythical beginnings of Rome from the Trojan war to its founding. The course will be also addressing cultural topics such as slavery, Roman dress, Roman houses and everyday life.

Music

Acoustic Guitar Ensemble

(Grades 8-12)

This course is best suited to beginning or intermediate guitar students. It will be necessary to purchase or rent a guitar for home use. Regular home practice will be required to progress in playing the guitar. The group will focus on learning basic chords and developing music reading skills. The ensemble will experience a wide range of musical styles as we emphasize playing together as a group.

Classical Ensemble

(Grades 8-12)

Students in this course will experience playing together in small chamber groups. Various classical pieces will be chosen based on the instruments and students available. This class is open to intermediate and advanced instrumentalists. Participation will include home practice and one or more performance(s) each semester.

Introduction to Music Technology

(Grades 8-12)

This course will explore the basics of creating and editing sound in the digital world using a wide range of programs and tools. Students will be introduced to beginning technical skills, with a focus on the basic building blocks of music. Open to any level of experience.

Jazz Ensemble

(Grades 8-12)

Unknown to some, jazz is America's one true original art form. This course, open to intermediate and advanced instrumentalists, will introduce students to the history, theory, and performance of a wide variety of jazz styles. Students will perform together as a group, as well as develop skills in improvising individually. Participation will include home practice and one or more performance(s) each semester.

Next Steps in Music Technology

(Grades 8-12)

This course is designed for students with some prior experience in music technology (like Garage Band or other programs). Students will be assigned longer projects which will require

developing the skills of analyzing and revising work. Emphasis will be placed on the overall form and structure of compositions and other creative output.

Percussion Ensemble

(Grades 8-12)

This class is for students interested in drumming as part of a larger ensemble. Strong rhythmic feel and the desire to be part of a disciplined group is required. A variety of different percussion instruments and styles will be introduced. To progress as a percussion student, some home practice is strongly advised. Participation will include one or more performance(s) each semester.

Vocal Ensemble

(Grades 8-12)

This course provides students an opportunity to sing together as part of an ensemble as they discover their voices and build a singing and performing repertoire as a group. The selection of music will be geared toward the students enrolled in the class to showcase their strengths as a group. Participation will include one or more performance(s) each semester.

1:1 Music Lessons

(Grades 8-12)

Depending on scheduling and availability, there may be the opportunity for some students to receive a private music lesson in instruments such as piano, trumpet, trombone, violin, cello, percussion, or music theory. Classes will likely be thirty minutes, and will require a commitment to home practice in order to progress.

Art

Art History

(Grades 8-12)

Art is the world's dream: the collective experience of human beings. This class will explore visual art from prehistory to the present day. Our survey will include: the rise of ancient civilizations, religious art, identity and the colonial experience, and the art of the industrial and media age. Special attention will be paid to the collision of cultures as new ideas spread across the globe; and how scientific discoveries have changed artists' perceptions of the world. Art will be examined from a variety of historical, psychological, and sociological perspectives.

Back-to-Basics (Level 1: Beginners)

(Grades 8-12)

This class is for the complete novice. We'll learn and practice color charts and mixing colors, step-by-step realistic line drawing techniques, tracing and coloring exercises, pattern and mandala designs, as well as pixel and mosaic art.

Digital Animation

(Grades 8-12)

Students will be introduced to a variety of animation techniques: hand drawn animation, rotoscoping, traditional digital animation, rigging a digital puppet, and stop-motion. In addition to animating: students will also study character design; and discover how modern special effects are derived from the techniques used by early animators. Professional level drawing skills are not a prerequisite for this class: but students are expected to produce their own animated GIFs and films.

Drawing (Level 2: Intermediate to Advanced)

(Grades 8-12)

This class is for students with a general understanding of perspective and figurative drawing. We'll learn and practice observational drawing, life drawing, portraits, still-life, perspective drawing and line drawing with pen and ink.

Independent Study: Artist-in-Residence

(Grades 9-12; with instructor approval; portfolio class)

Students will be encouraged to work with all materials to produce original artwork, taking turns throughout the year to showcase their work. All students will participate in a group exhibit at the end of each term.

Painting (Level 3: Advanced)

(Grades 10-12)

This class is for students with good basic skills in watercolor painting and drawing who wish to improve and to progress to painting with acrylics.

Movement

Capoeira

(Grades 8-12)

A sport combining rhythmic dance, martial-arts, and acrobatic movements that originated in 16th-century Brazil. Capoeira was invented by African slaves who practiced it as a form of self-defense disguised as dance.

Health and Fitness

(Grades 8-12)

This course will keep you moving! Students will participate in basic stretching, walking and fitness exercises essential to a healthy lifestyle.

Introduction to Yoga

(Grades 8-12)

This course introduces the ancient discipline of personal development that balances body, mind, and spirit. Students will learn basic yoga poses while practicing relaxation and mindful breathing.

Strength and Conditioning

(Grades 8-12)

This course is designed to give students the opportunity to learn weight training concepts and techniques for obtaining optimal physical fitness. Students will learn the basic fundamentals of strength training, weight/resistance training, aerobic training, boxing and overall fitness training and conditioning.

Table Tennis

(Grades 8-12)

Table Tennis is quickly increasing in popularity in the United States! Join this class to speed up your hand-eye coordination, and learn how to play this fun game for recreation or competitive purposes.

Team Sports

(Grades 8-12)

A variety of sports and physical activities will be offered. Students will play games like soccer, Ultimate Frisbee, basketball and floor hockey.