



**MERCERSBURG
ACADEMY**

Course Catalog
2020-2021

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Advanced Studies Course List

The following courses represent the most advanced courses offered in the Mercersburg Academy curriculum. These college-level courses are available, with department permission, to students seeking an increased level of challenge and expectation. All advanced studies courses will be clearly marked on student transcripts.

Although Advanced Placement exam scores are not part of a student's college application, we know that some students use these scores for college placement and credit. Many of our courses align with the AP curriculum and will prepare students well for the AP exam if they are engaged and committed to the work. Other courses offer a unique curriculum available only at Mercersburg. Distinctions are indicated below, including courses that are partially aligned, which means that some additional work will be necessary for students to be prepared for the AP exam. With department approval, students may choose to sit for an AP exam in any course.

Courses aligned with the AP curriculum	Courses partially aligned with the AP curriculum	Courses unique to Mercersburg
Math AS: Calculus I	Math AS: Statistics	Math AS: Calculus III
Math AS: Calculus II	Science AS: Biology	Language AS: Latin Lit
Math AS: Economics	Science AS: Chemistry	Language AS: Francophone Lit
Language AS: Latin Vergil/Caesar	Science AS: Environmental Science	Language AS: Hispanic Lit
Language AS: French Language	History: AS US History	
Language AS: Chinese Language	English AS: Literature and Composition	
Language AS: German	History AS: Art History	

Courses aligned with the AP curriculum	Courses partially aligned with the AP curriculum	Courses unique to Mercersburg
Language AS: Spanish		
Math AS: Computer Science		
Science AS: Physics C E&M and Mechanics		
Science AS: Physics C Mechanics		
History: AS Comparative Government		
History: AS World History		
English AS: Language, Rhetoric, and Composition		

Arts Department

Arts

Acting I	<p>SPRING. Prerequisite: None, open to all students</p> <p>Performing truthful action on stage is the actor's essential task. This course introduces students to basic acting skills, focusing on character development through improvisational theater games and increasingly more complex open scene projects. Students are exposed to a wide variety of techniques focusing on building skills of concentration, spontaneity, imagination, physicalization and vocal dexterity.</p>
Acting II: Shakespeare in Performance	<p>SPRING. Prerequisites: Acting 1 or completion of a 10th grade English Class.</p> <p>Shakespeare and other Early Modern playwrights will be studied using the skills and techniques of the actors who were the original audience for the texts. Students will work as a self directed ensemble and advance their skills of text analysis, study of verse vs prose, and development of character using the script as their starting point. Students will also explore the theatre styles that influenced the Early Modern Playwrights and the styles that developed after the Renaissance. These may include Greek Theatre, Commedia Dell'arte, Restoration Theatre, and Melodrama.</p>
Acting II: Contemporary Scene Study	<p>WINTER. Prerequisite: Acting I or Stage Combat or permission of instructor.</p> <p>This class will continue to develop the skills and theory presented in Acting I. Contemporary Scene Study focuses on the performance of scenes from realistic plays and films using Stanislavsky theory as the basis for character development and scene analysis. Students will hone their skills as actors, beginning to develop a personal practice and an understanding of themselves as performing artists.</p> <p>More advanced principles of acting will be applied to realistic texts through scene work, exercises, and improvisations. We will begin our exploration of realistic texts with scenes from plays in the American or European Canon of Modern Drama. Character development practices, scene analysis, and the actor's basic approach will continue to be developed. Exercises for further growth of the Actor's Voice and Body based on Lessac Kinesensics will be integrated into class work and daily warmups.</p> <p>Discussion and critique are an integral part of the process as scene work is done in class.</p>
Advanced Performance	<p>Prerequisites: Concurrent enrollment in Band, Chorale, or Strings and completion of Acting 1 or previous experience in Stony Batter.</p> <p>Students who take Advanced Performance are currently participating in Band, String, or Chorale Ensembles but also wish to continue their training in acting.</p> <p>Advanced Performance is a multi-discipline course for upperclassmen.</p> <p>This course allows a student to participate in their yearlong music ensemble and advance their theatre/musical theatre technique without adding an additional class to their schedules. This course is particularly helpful to those considering theatre/musical theatre as a future area of study. Students accepted into Advanced Performance will substitute this class for Band, Chorale, or Strings twice a week.</p>

Course Name**Catalog Description**

Advanced Studies: Art History

Prerequisite: successful completion of US History.
Fairly strong reading and comprehension skills suggested.

This course may be taken for history credit.

This survey of selected images of Global Art through the ages, involving architecture, painting, sculpture and the related arts, follows skill building guidelines of description, explanation, analysis, as well as making conceptual connection in comparison and contrasting fashion. Reading material, slides, active class discussion, and museum visits are the tools used to aid the student's knowledge. It prepares students to identify art from specific cultures, periods, and styles and develops the ability to verbally articulate the comparison of conceptual themes between cultures and artwork. This course also concentrates on improving the student's writing to be descriptive in a clear and concise format.

Advanced Studio Art

Prerequisite: Second level of a Visual Art class.
Completed application.
***For Upper Middlers only.
Department approval required.

Advanced Studio Art values the students' creative processes as well as their final artwork. Students will develop techniques in a variety of media, and then conduct thoughtful inquiry into their own thinking and art making processes' recording this learning in written and visual formats in their sketchbooks. Students are expected to be independently motivated as they research artists and art works throughout history and across cultures. Connecting their research to their own work, students will create a portfolio of artwork that expresses their own personal voice within a cultural context. In addition to learning how to appreciate and evaluate their own work and that of others, students will be required to share their work with an audience through exhibitions in the Cofrin and gallery niche. Frequent assessment of their sketchbooks and work through critique individually with the instructor and in groups with the other members of the class.

Advanced Topics in Ceramics

SPRING. Prerequisite: Ceramics II or permission of the instructor.

Advanced ceramic principles, methods, and techniques will be taught through the use of hand-built and/ or wheel-thrown objects (students preference).

Student will choose their course of independent study with the guidance of the instructor. The elements of art, art historical reference, sources, and personal expression will be addressed even further. Design and composition aesthetics are paramount in teaching a student how to communicate their message using a ceramic object.

Band Performance

Prerequisite: Permission of the department.

This course is designed for students who play brass, woodwind and percussion instruments. Students practice performance skills both individually

Course Name**Catalog Description**

and as an ensemble. Required public performances are an important part of the work for this course. The course encourages an understanding of the aesthetics of music and also teaches the skills of intonation, sight reading, blending, tone quality, and basic musicianship. Students are enrolled into this course upon recommendation of the music faculty.

This course earns 2/3 credit per term.

Ceramics I

FALL, WINTER, SPRING. Prerequisite: None.

This course is an introduction to the fundamental methods and techniques of ceramics. Students will work four weeks at the wheel and four weeks hand-building. The assignments address context and content issues as the students create sculptural and utilitarian objects. Glazing the objects with an informed understanding will be developed. The course also addresses the nature of art as it relates to the specific object.

Open to all students.

Ceramics II

FALL & WINTER. Prerequisite: Ceramics I.

Intermediate ceramic principles and techniques will be taught through the use of hand-built and/ or wheel-thrown objects (students preference). The elements of art, art historical reference, sources, and personal expression will be addressed. This course is intended to give the student an understanding of concepts common to all three-dimensional art forms. Art historical references will be researched to support the students personal expression.

Choral Performance

Prerequisite: None.

This course is designed for singers - sopranos, altos, tenors, and basses. Students will practice performance skills both individually and as an ensemble. Public performances will be an important part of the work for this course. The course will encourage an understanding of the aesthetics of music and will also teach basic music theory and sight reading. Students will be enrolled into this course upon recommendation of the music faculty.

This course earns 2/3 credit per term.

Dance Composition I

FALL & WINTER. Prerequisite: None.

Open to all students.

This course provides students the opportunities to learn the fundamentals of choreography. Students come to recognize that a dance has a beginning, a middle and an end, and that the form of a dance must be related to its content if it is to be an aesthetic whole. Through experimentation and improvisation, compositional elements are gradually introduced (space, time energy, etc.) and students attempt to incorporate these elements into their compositional work. After school rehearsals, special engagements and performances may be required.

Dance Composition II

SPRING. Prerequisite: Dance Composition I or permission of the instructor.

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This course provides students the opportunities to further extend the acquisition of knowledge of techniques of choreography and performance.

The content includes experiences in dance critique, research on periods in dance history, lighting design, costumes and dance choreography for performance. After school rehearsals, special engagements and performances may be required.

Dance Composition III

SPRING. Prerequisite: Dance Composition II or permission of instructor.

This course will provide students the opportunity to further extend the knowledge of techniques of choreography and performance. Students will express their understanding of choreographic elements (space, time and energy) through the use of both traditional and invented movements. Group work, including partnering, as well as solo work, is explored.

Digital Imaging

WINTER. Prerequisite: None.

Open to all students.

Students will learn and explore Adobe Photoshop as a digital imaging and digital paint tool. Students will create artwork using the current technology within raster or pixel graphics using digital cameras, scanners, Macintosh Computers, and Wacom Tablets. They will use Adobe Photoshop to create composite images, paint digitally, and design layouts. The students will explore color theory, composition, conceptual art, and typography. Students will develop a portfolio that demonstrates the technical, design and conceptual skills. They will develop their artistic eye using various design techniques like the Rule of Thirds and other grid systems. They will create commercial and fine art while building the foundations of the principles and elements of art and design.

Digital Photography

FALL, SPRING. Prerequisite: None.

Open to all students.

This class provides students the opportunity to study and explore digital photography and learn techniques used in a digital darkroom. Students will learn how to properly use a Digital Single Lens Reflex camera. Students will explore and learn manual settings, camera optics and focal lengths, lighting, perspective and exposure. The second half of the course will focus on processing the images using current digital darkroom techniques. Students will learn to process images using Adobe Lightroom and Adobe Photoshop. Students will develop a portfolio that demonstrates technical, design and conceptual skills. Students will have the opportunity to explore both natural and studio light scenarios. They will develop their artistic eye using various design techniques like the Rule of Thirds and other grid systems. They will create commercial and fine art while building the foundations of the principles and elements of art and design.

Student capacity: 13

Digital Photography II

SPRING. Prerequisite: Digital Photography or permission of the department.

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This class provides students the opportunity to continue studying and exploring digital photography. They will build upon their foundation learned in Digital Photography I and learn advanced techniques used in-camera, with studio lighting and a digital darkroom. Students will use a Digital Single Lens Reflex camera to create fine art and commercial photography. Students will explore and learn advanced techniques in shooting, camera optics, and focal lengths, lighting, perspective, and exposure. The course will focus heavily on conceptual work and visual literacy. Students will learn to process images using Adobe Lightroom and Adobe Photoshop.

Students will develop a portfolio that demonstrates the technical, design and conceptual skills. Students will have the opportunity to explore natural light, studio light, and scenarios that require the photographer to balance both. They will develop their artistic eye that uses the medium to control the creative voice and concept of the work. The course will focus on learning and building functional applications of the principles and elements of design.

Digital Video Art

WINTER. Prerequisite: None.

Open to all students.

This course is an introduction to the principles of film media, with an emphasis on digital video capture and editing. Students combine audio, video technology and 2D graphics of filmmaking. Students will explore camera, audio and editing techniques that build the story and mood of a film or documentary. Students will spend time analyzing films from a filmmakers perspective and apply this to their own work.

Drawing I

FALL, WINTER, SPRING. Prerequisite: None.

Open to all students.

This course introduces students to the Elements of Design: line, shape, value, form, space, texture and color. These Elements are emphasized and rendered through direct observation and exploration manipulating various dry media such as pencil, charcoal, cont' crayon and marker. Each lesson and project progressively builds upon the next culminating in a Self-portrait built upon the proportions and scale of the human skull. These projects allow the student artist to formulate conversation with the knowledge to describe, analyze, and interpret ART in and out of the studio setting.

Drawing II

WINTER. Prerequisite: Drawing I.

Students build on techniques learned in Drawing 1 incorporating Elements of Art with Principals of Design. The students begin working from observation to employ the Principals of Design and move from representation to deconstruction and essence building their comfort in crafting more conceptual themes. Creative curiosity is nurtured as students develop visual statements evoking emotion and meaning beyond representation.

Materials include but are not limited to pencil, pen, charcoal, conte crayon, pastel and ink wash.

Introduction to Dance

FALL, WINTER. Prerequisite: None.

Open to all students.

This course will provide students with the opportunity to acquire proficiency in dance regardless of previous training and background. From the

Course Name**Catalog Description**

athlete looking to improve balance and flexibility to the student with prior knowledge wanting to develop their interest in dance, this course is designed to incorporate all levels of ability.

The content includes application of fundamental principles of modern, ballet and jazz technique. Including barre, center floor, axial center, and locomotor and physiologically sound movement progressions. Class will primarily consist of technique; however, a variety of dance related topics (including the introduction of the history and terminology of these idioms) will be covered in lecture format.

Mixing Music in the Digital Age

FALL, WINTER, SPRING. Prerequisite: None.
Open to all students.

This course introduces students to the world of music production using the contemporary music software GarageBand. Mixing Music provides a project-based, hands-on experience in loop-based music production, MIDI basics, audio recording, digital signal processing and effects, live and post-recording mixing, and digital mastering. Students do not need to have a music performance or music-reading background.

Mixing Music in the Digital Age II

SPRING. Prerequisite: Mixing Music I and permission of the department.

Students with past experience with DAWs may qualify based on a project they submit.

This course continues work completed in the first level of Mixing Music in the Digital Age. We move from a basic DAW (digital audio workstation) in Garageband to a professional workstation in Logic Pro X. More advanced compositional techniques and more advanced music theory will be explored, building on what was learned in Level I. Additional emphasis will be placed on techniques in mixing tracks via an analog mixer.

Modern Dance

SPRING. Prerequisite: None.

Modern Dance provides students with opportunities to acquire knowledge and skills in basic modern techniques. The content includes knowledge and application of fundamental principles of modern dance including released-based techniques, rolling through the spine, fall and recovery, contractions, moving to and from the floor with ease, stretching, strengthening the core connection, proper alignment, and improvisation. Center floor, axial center, locomotor and physiologically sound movement progressions across the floor are followed by center combinations. Styles include classical and contemporary modern vocabulary.

Painting I

FALL, WINTER, SPRING. Prerequisite: None.
Open to all students.

This course introduces the student artist to acrylic paint and it's formal application using the Elements of Design: line, shape, value, form, space, texture and color. Student artists will learn how to talk about their work and the work of others through Critical Analysis as they describe, analyze and interpret ART. Color theory, composition, and life rendering will be stressed as the student artist becomes more adept in rendering to then culminate in a personal choice subject adhering to the Artistic Process.

Painting II

SPRING. Prerequisite: Painting I.

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In this course students build on the techniques learned in Painting 1 incorporating Elements of Art with Principals of Design working in traditional and non-traditional application of the acrylic medium, watercolor, oil, and mixed media. The students work primarily from observation to explore composition, perspective, foreshortening and shading while diving deeper into the manipulation of the medium and will build a custom substrate using stretcher bars and canvas for their final painting. Creative curiosity is nurtured as students develop visual statements from conceptual themes evoking emotion and meaning.

Practical Design & Production

FALL, WINTER. Prerequisite: None.

In practical Design and Production students develop basic skills in building, architectural painting and design, and historical research as they relate to creating practical objects. Materials/techniques will include woodworking, sewing, 3d printing etc. This is the first step for students with an interest in makers spaces and theatrical design.

Sculpture I

FALL, WINTER. Prerequisite: None.

Open to all students.

This introductory course addresses the formal elements and the fundamental methods and techniques of sculpture using a variety of materials. Assignments focus on developing a student's creative thinking relying on personal experience.

Materials used are wire, wood, and glass.

Speech

FALL, SPRING. Prerequisite: None.

Open to all students.

This class will introduce students to the speaker's basic tasks: clear, full, free vocal and physical communication. Students will be exposed to a wide variety of exercises and techniques, focusing on building skills of articulation, phrasing, rhythm, tempo, concentration, spontaneity, imagination, physicalization, and interpretation.

Fundamental principles of speech will be presented through exercises and improvisations. Techniques for freeing and developing the Voice and Body will be integrated into classwork and daily warm-ups. A process for vocal and analytical interpretation of various forms of literature (prose, poetry, drama) will be introduced. Extemporaneous presentations will be developed as well. Students will rehearse, perform and evaluate their work and that of their classmates as work progresses. Students will learn skills leading to a well planned oral presentation.

Stage Combat

FALL, WINTER. Prerequisite: none.

Stage Combat is open to any student who would like to learn how to tell a story through SAFE non-contact combat mime. Work will include hand-to-hand combat, throws, sword and weapons work, and slapstick comedy.

Students will increase their flexibility, strength, and physical control while also stretching their imaginations and learning about the history of

Course Name**Catalog Description**

combat through the ages.

String Performance

Prerequisite: Permission of the department.

This course is designed for string players - violins, violas, cellos, and string bass players. Students will practice performance skills both individually and as an ensemble. Public performances will be an important part of the work for this course. The course will encourage an understanding of the aesthetics of music and will also teach basic music theory and sight reading. Students will be enrolled into this course upon recommendation of the music faculty.

This course earns 2/3 credit per term.

Voice and Vision

FALL. Prerequisites: Graduation requirements for Fine Arts must be met prior to enrolling in this class.

Students must have taken previous classes in the visual arts in which a body of work has already begun. Departmental approval required.

This is a course for seniors.

Through a variety of media, this term course enables student artists in twelfth grade to more deeply explore and express their visual statements, further weaving investigation, technique, and personal experience with their emerging personal aesthetic—resulting in a unique voice and vision.

Portfolios created may be used as primary or supplemental to the college application process flexing the student's depth of creative acumen. To complete their study in a culminating event, each student will showcase a portion of their body of work in the Cofrin Gallery during the Spring's Senior Art Exhibit.

Working Title: An Introduction to
visual storytelling

FALL. Prerequisite: None.

Class participants will be scriptwriters, directors, and performers in a series of projects that will develop their understanding of how to influence an audience through short films. The class uses cell phones or tablets for filming which puts the focus on story development rather than technical elements of video production.

English Department

English

Advanced Studies: Literature and Composition Prerequisites: An 85 or better (unweighted) in AP English Language or 90 or better in Wanderlust and Identity at Mercersburg. Evidence of strong achievement in English. Teacher's approval is required. Departmental permission required.

Must maintain an 85 average (unweighted) in this course or placement is subject to review.

In Advanced Studies in Literature and Composition, students learn to think critically and write cogently about the texts with which they engage. They also learn to expand their notions of what a text is. Certainly a text is a novel, play, or poem, but a text can also be a groundbreaking symphony, a masterpiece of cinema, a riveting speech, a landmark jazz recording, or even a TV commercial. Consequently, students discover that, like reading, listening and viewing need not be passive activities. The texts in the course, while they may vary from year to year, span from the classical to the contemporary and offer an intentional study of the evolution of global perspectives and how the arts reflect such shifts.

Advanced Studies: Language, Rhetoric, and Composition Prerequisite: 60 on verbal PSAT or 600 on SAT critical reading. An 85 or better (unweighted) in Power/Justice H or 90 or better in Power/Justice at Mercersburg.* Evidence of strong achievement in English. Department and teacher approval is required.

Open principally to eleventh graders who have demonstrated the ability to do very rigorous work in English.

Must maintain an 85 average (unweighted) in this course or placement is subject to review.

This course is aligned with the AP English Language and Composition curriculum. COURSE NAME is primarily a course in effective argument writing, analysis of rhetorical features of a text (critical reading), and synthesis of sources, with an emphasis on non-fiction. It is designed for the student with an honor's level command of composition and grammar skills.

American Plays FALL. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

This course will introduce students to some of the greatest plays of the modern American theatre. The class will be taught using interdisciplinary, project-based methods that interact with the texts not only as dramatic literature, but as works of art written to be performed. In addition to reading, discussing, analyzing, and writing about these works, students may choose to prepare a scene for in-class performance in place of taking a written final exam. The class will also make at least one trip to see a professional production of one of the plays, playwrights, or topics studied. Texts include All My Sons, Buried Child, Lost In Yonkers, Proof, Other Desert Cities, and August: Osage County.

Art Cinema FALL. The term "art cinema" is one of the most familiar in film studies, marking out simultaneously specific filmmakers, specific films, specific kinds

Course Name**Catalog Description**

of cinemas, and, for some writers, specific kinds of audiences. Art cinema is often defined as an artistic or experimental work expressing symbolic meaning through the medium of film. It is ambiguous, aesthetically rich, and complex. This class will discuss a number of art films from around the world, though its focus will be primarily on European cinema.

Throughout this course, we will revisit the very idea of art cinema and work towards creating our own definition of what art cinema actually is and how it has changed throughout the 20th century. We will watch a number of films by so-called auteurs and consider what art cinema's relationship is to our larger, global culture. On average, students will watch about one film a week, and the course will have a number of readings about film theory and criticism.

Beyond Borders

SPRING. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

Why do we wander? What is it about distant landscapes and cultures that draws us to them? Why are harrowing journeys often the most rewarding? When we find ourselves in an exotic land, what is it then that fills our senses, that conjures memories well into the future? That transforms us from wayfarer to storyteller? In *Beyond Borders*, we will explore the nomadic impulse, the tales spun from some of the earliest 'great journeys,' and the evolution of the modern genre. We will read both travel essays and longer works, like Peter Matthiessen's *The Snow Leopard*. And in doing so, we will address some of the most profound questions ever posed about human restlessness.

**Contemporary Poetic Theory:
Shifting Soundscapes**

WINTER. Just how does one go about writing an original poem? How about song lyrics? Spoken word? It's time we explored these opportunities!

This course is both analytical and creative, and will offer students an open and earnest exploration of the craft of language that will become poetry, song lyrics, spoken word, or something else...

It is largely a short-form poetry course, but with emphasis on other creative avenues and possibilities available to the 21st century artist.

We will read poems, listen to spoken word, share music lyrics, and most importantly, build some of our own.

Students will emerge with a stronger understanding and higher proficiency with poetic techniques, developments in poetry from the twentieth century to the present, and a portfolio with a combination of written analyses of other works and original creations.

Existentialism in Literature

WINTER. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

Though today considered a major philosophical movement, Existentialism began predominately as a literary movement. Following the rise of modernism and riding on the heels of the Great War, existentialist writers explored questions of meaning and order in human existence.

Concerned with the isolation and alienation they observed in the wake of modernization and urbanization, existentialists brought renewed energy to the puzzle of individual identity and the meaning of the human self. War and poverty fueled doubt in the existence, benevolence or omnipotence of God. This challenge to Providence opened the door to the threats of chaos, absurdity and, ultimately, meaninglessness.

Students in this course will read works of drama and fiction to develop an understanding of the discourse of existentialism. By the end of the term,

Course Name**Catalog Description**

students will understand both the philosophical basis of existentialism and the challenge it presents to traditional religious worldviews.

Fantasy Literature

WINTER.

Senior Elective.

This senior English term course will introduce students to the works of some of the best fantasy writers of the last half-century, focusing most specifically on those stories that involve either the intrusion of fantastic forces into the modern world, or on protagonists who unexpectedly find themselves drawn to or dropped into fantasy realms. The reading list for the course will boast a who's who of Hugo, Nebula, and World Fantasy Award winners. Students will also view an Academy Award-winning fantasy film or two, critically speak and write about these works, and pen one or more short fantasy pieces of their own.

Gender, Race, and Sexuality in Shakespeare

SPRING. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

Students often consider the concepts/constructs of gender, race, and sexuality as contemporary notions, when indeed they are as old as humanity itself. Who better to help students come to a greater understanding of these issues than the Bard? Students will read two plays in their entirety, one tragedy and one comedy, which have notions of gender, race, and sexuality at their core. To augment and deepen our study, scenes from several other plays will also be considered. We will also discuss selected sonnets, especially those concerning the "Fair Youth" and the "Dark Lady". Additionally, the course will employ current multimedia resources in order to allow students not only to understand gender, race, and sexuality in contemporary society but also to form their own definitions of these concepts/constructs.

Graphic Novels

WINTER. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

A senior elective.

This course will introduce students to some of the most mature and compelling examples of the literary-visual hybrid popularly known as 'comics.' Students will not only deliberate upon the themes and topics explored in the course's texts, but will also be asked to apply critical-thinking skills to complete multi-disciplinary projects that include researching historical and cultural contexts, composing literary analyses, and collaborating on original graphic literature pieces, either by illustrating the work themselves or through the use of technology. Graphic Novels is designed for students who enjoy sophisticated stories, seek to improve their visual literacy, and wish to explore the extent to which this genre allows us to decode language, interpret art, and understand our world. Texts include Batman: The Dark Knight Returns, American Born Chinese, Pride of Baghdad, This One Summer, Understanding Comics, and Watchmen.

Honors Power, Justice and Authority

Prerequisite: Approval of the English Department based on performance in ninth grade English and performance on standardized tests.

Open to tenth grade students who have done superior work in English. 50 on verbal PSAT or at least a 695 on the critical reading section of the

Course Name**Catalog Description**

SSAT. A 90 or better in World Lit at Mercersburg. Evidence of strong achievement in work in English. Also, teacher's approval is required. Must maintain an 85 average (unweighted) in this course or placement is subject to review.

The course provides extensive work in composition and reading; student compositions need to reflect strong competence and careful reading of the works studied. In studying classical, Elizabethan, and modern literature, students explore some of the principal questions of the humanities. Reading: Fahrenheit 451 by Ray Bradbury; Macbeth by Shakespeare; Antigone by Sophocles; Things Fall Apart by Chinua Achebe; Their Eyes Were Watching God by Zora Neale Hurston, Catcher in the Rye by J.D. Salinger and 1984 by George Orwell.

In Pursuit of the Essay

FALL. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

This term class focuses on a variety of readings, literary genres and writing techniques. The selected readings, both novels and short stories, are used to inspire a variety of forms of student writings that focus on clarity, diction, organization, creativity, and the development of a personal writing voice. These readings encourage students to connect with their world, to examine contemporary ideas and issues, and to address philosophical questions. Studied texts raise questions not only related to the story, but also to the student's assumptions and understanding of the way the world works. Students will be required to write appropriately about emerging themes, ideas and issues in a variety of formats including the personal essay, the expository essay, and the persuasive essay. This class will probe beyond the expository essay writing style to focus on tone, creativity, and alternate approaches to creating voice in their writing. Selected stories have included American Hunger by Richard Wright, The Weak Shall Inherit the Gym by Rick Reilly, and Fat by Raymond Cover. Current texts: Kilter: 55 Fictions and The Fault in Our Stars.

Introduction to Film Studies

SPRING. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

A senior elective.

For over a century, film has developed as an extension of literature, theater, and art. As literature presents complex ideas to an audience on paper, film echoes this through the medium of celluloid. Literature uses syntax, diction, dialect, and numerous literary tools to translate meaning to an audience. Film has an arsenal of tools from the literature, theater and art worlds at its disposal: lighting, music, framing, lens type, editing, film stock, sound, acting, and many more are all used to create meaning. Understanding how these tools are used gives students a vocabulary for visual literacy, and allows them to gain meaning from a film as they would from literature, theater, or art. With forms of media permeating our lives, our ways of interpreting the world are deepened by an understanding of their meaning and place.

Through works in this course, students will learn how to analyze films in a similar manner to literature, theater, or art. Additionally, students will study landmark and groundbreaking films, the history of film, genres, and film-making to learn how to dissect story for a deeper understanding of the work. One full feature length film will be taught per week, and students will be required to participate in class discussion, complete writing and reading assignments, take quizzes and tests, and write papers.

Introduction to Journalism

FALL. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

A senior elective.

Course Name

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In this course, the class will investigate the way news is defined and reported as well as how news organizations function. The focus will be on how to write effective news, feature, editorial and sports articles. Students will learn how to develop story ideas, how to gather information and how to write clearly and meaningfully. Students will be encouraged to identify and cultivate their own area of interest, whether it is news writing, magazine writing, or another area of writing to convey information and/or entertain. Students are encouraged to develop their own personal style of writing. Both lecture and discussion of theory will be applied.

Introduction to Poetry / The Art of Poetry

FALL. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

With a focus on the building blocks of verse, Introduction To Poetry serves as a foundational course for poetry courses offered in the winter and spring terms. Students will discover the “Art of Poetry” by reading, writing, and sharing it. As they examine a diversity of contemporary poems and poets including the Poet Laureates, students will experiment with line, stanza, form, figurative language, rhythm, and sound. This course encourages poem generation, poem iteration guided by workshop, public speaking through participation in community events, and submission for publication.

Texts include The Poet X by Elizabeth Acevedo.

Introduction to Professional Criticism

FALL. In this course we will read, discuss, and compose literary, dramatic, song, film, culinary, and product reviews, to name a few. Soundbite culture seems to have found a holding pattern, so in 200-800 words, we should find a way to inject careful and objective observation, analysis, and style into our writing.

Be prepared to develop the instincts of a critical reviewer, establishing your own criteria for each medium we investigate.

Read samples of product reviews by professionals, amateurs, and of course, user reviews...

So just what types of material will catalyze our evaluations? We will read or experience:

- Short fiction
- Going on location to watch a live performance
- Television episodes
- Watching an entire film from a major studio
- A full studio album
- Dozens of individual songs from a ton of different genres
- Going on location to share a meal at a successful independently owned restaurant
- more

Students will all emerge with sharper writing skills, a portfolio of original reviews, and a wider range of appreciation for art and culture.

Course Name**Catalog Description**

Literature and Language of Sports

WINTER. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

Whether a fan realizes it, sports play a dramatic/literary/narrative role in American culture. Our pastimes include characters playing out scenes within a contrived setting that allows for timely triumph and failure. Therefore, the games we play often feed and inform works of literary merit, allowing readers and viewers to explore and consider what William Faulkner called the 'problems of the human heart.'

In this term-length course, books, poems, films, paintings, and songs featuring American sports will provide a significant literary gateway, allowing students an intense study of American motivations, mores, beliefs, and values.

Modern and Contemporary Queer American Poetry

WINTER. A time of rage and ambivalence, of setbacks and triumphs, and of literary milestones and achievements—oh what a queer time it was! From the elegiac to the tragic, from the tragic to the comic, this course surveys some of the most memorable LGBTQIA2S+ poems written throughout the 20th and 21st centuries.

Starting with major figures in Modernism such as Hart Crane and Gertrude Stein, we'll end in our contemporary period with writers like CAConrad and Jericho Brown. In our attempt to define what queer poetry actually looks like, we'll ask what these poets' work meant in their own times, as well as what it means to us in our present era of expanding civil rights and changing sexual attitudes.

Poetry Forms Workshop

SPRING.

Rather than focus on traditional forms like the sonnet, villanelle, or sestina, this poetry workshop explores newer, more experimental poetic forms from the 20th and 21st centuries. The class will be structured around a series of writing experiments, collaborations, readings, and the production of portfolios (print or digital) for each student, and a performance of students' work. Each week, students will workshop the writing they have done as well as discuss the assigned reading.

Post-Apocalyptic Fiction

SPRING. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

Since well before the atomic age, authors have explored the notion of the end of modern civilization, ravaged by anything ranging from a global pandemic to cataclysmic natural events. Whether due to the long-term effects of living in a post-9/11 world, or our growing sense of political and economical uncertainty, this literature has permeated our culture, becoming increasingly popular over the past decade. This English term course will introduce students to characters struggling to retain their humanity amidst the chaos and corruption of post-apocalyptic worlds. Our thematic investigations will consider good and evil, the moral costs of survival, redemption and salvation, loneliness and longing, hope in the face of despair, governmental collapse, and gender roles.

Postmodernism

FALL. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

We currently live in the "postmodern" era, a time in which everything from politics and film to humor and even knowledge are permeated by a sense of relativism. Can we say that something is true, or only that it is true for us? This trend has had far-reaching implications. Think of the 2016 U.S. presidential election and "fake news," for example.

Course Name**Catalog Description**

By looking at literature, art, philosophy, religion, film and other media, we will examine what it means to be human at this moment in history. Big questions will animate this course: does God exist? Is there a right and wrong? Is truth objective? How do I find meaning in life? This course is designed for students who like questioning the world around them.

Power, Justice and Authority

Prerequisite: None

For most tenth graders.

Themes of power, justice, and authority are inherent to humankind and, in turn, permeate literature. Through the works studied in this course, students will explore what it means to seek and to wield power, the recognition, use, and abuse of authority, the perspectives of those who have, or perceive to have, neither, and the varying definitions of justice and injustice. Students will continue to hone their composition and critical-thinking skills through sustained study and practice of the writing process and the expository essay. Students will apply the principals of classic, positive-case argumentation to formulate a clear, concise principal assertion that is supported by ample, accurate evidence and enhanced by thoughtful, original, confident commentary. Particular emphasis will be placed on the careful evaluation and crediting of sources, the ethics of sound research and scholarship, and the importance of effective hooks, topic sentences, and transitions. Students will also be challenged to demonstrate a heightened awareness of audience, the refinement of a unique and compelling personal voice, and an increasing mastery of diction and syntax. Increasing vocabulary will also be a priority. Texts include a variety of short stories and poems, 1984, Fahrenheit 451, Macbeth, and Catcher in the Rye.

The Art of Fiction

WINTER. A senior elective, this course can also be taken in the 11th grade if taken in addition to a year-long English course.

A senior elective.

By focusing on plot, setting and character, this course will offer the student practical experience in the creative process of crafting short stories beginning with dialogue and scene painting to plotting and fully-drafted stories. It will focus on the construction of short fiction from foundations of voice, tone, diction and syntax, and include emphasis on plot, dialogue, description, pacing and sound. It will review various conventions of the short story and methods of work shopping for revision.

The Little Magazines: Editing and Publishing

SPRING.

This course introduces students to a range of literary journals and magazines being published in the U.S. and throughout the world, both online and in print. Students will learn what editing and publishing look like at the collegiate and professional levels, and they will also learn what is required to produce a literary journal at multiple times throughout the year. During the course, students will also meet and share interviews with editors working at literary journals today. In addition, students will have the opportunity to review submissions received by prominent literary journals in the U.S. This course will be divided in the following way: the first half of the course will focus on the historical and contemporary landscapes of literary journals; the second half will emphasize editorial work and will culminate in students' conception and design of their own

Course Name**Catalog Description**

literary magazine.

Wanderlust and Identity in
American Literature

Prerequisites: None.
Basic course for 11th graders.

Wanderlust and Identity in American Literature examines how the wide open and diverse lands of America left an indelible mark on those living here, inspiring them to travel and confront their own identity. The variety of experiences—from the wilds of Alaska to the austerity of New England—play a role in shaping how Americans view the world and themselves. Through novels, short stories, and poems, we will focus our attention on the construction of the American Identity and how America's diversity inspires different voices to expand on the meaning of the American experience.

World Literature

Prerequisite: None
Basic course for ninth graders.

The course is devoted to the study of composition and literature. In addition there is work in vocabulary and grammar. A variety of writing assignments is required; the novel, the short story, poetry and drama are studied. Readings: Shakespeare's Romeo and Juliet; Candide by Voltaire; Animal Farm by George Orwell; The Iliad by Homer; All Quiet on the Western Front by Erich Maria Remarque, The World's Greatest Short Stories, and The Seagull Reader: Poems.

History Department

History

Advanced Studies: Art History

Prerequisite: successful completion of US History.

Fairly strong reading and comprehension skills suggested.

This survey of selected images of Global Art through the ages, involving architecture, painting, sculpture and the related arts, follows skill building guidelines of description, explanation, analysis, as well as making conceptual connection in comparison and contrasting fashion. Reading material, slides, active class discussion, and museum visits are the tools used to aid the student's knowledge. It prepares students to identify art from specific cultures, periods, and styles and develops the ability to verbally articulate the comparison of conceptual themes between cultures and artwork. This course also concentrates on improving the student's writing to be descriptive in a clear and concise format.

Advanced Studies: Comparative Government and Politics

Prerequisite: concurrent enrollment in or successful completion of US History. Department permission required for all students.

This course is an 11th or 12th grade elective.

Advanced Studies: Comparative Government and Politics takes a detailed look at the political, economic, and social characteristics of six countries: the United Kingdom, Russia, China, Mexico, Iran, and Nigeria. In addition, the course focuses on the roles of supranational organizations such as the European Union, NATO, the United Nations, and others. Key topics and concepts include the nature of political power, the reasons why some states succeed and others fail, the purposes of different institutions of government, the development of political culture, the importance of effective economic policy, and the crucial roles played by civil society, media outlets, political parties, policy-makers, and shifting demographics. The course also provides students with a framework for understanding how nations work and how they interact with each other.

Advanced Studies: Economics

Prerequisites: successful completion of Algebra II.

A combined SAT score (CR & M) of 1100 or ACT score of 27 is required.

Recommendation of the department.

Open to 11th and 12th graders. This course can also be taken to earn credit in Math.

A full-year course in Microeconomics and Macroeconomics, with Microeconomics covered in the first half of the year and Macroeconomics covered in the second half. The year will begin with basic concepts in economics, including opportunity cost, production possibilities curves, and analysis of the margin. Topics in Microeconomics include supply and demand, taxes, externalities, costs, the theory of the firm, and the labor market. Topics in Macroeconomics include growth and GDP, inflation and CPI, saving and investment, unemployment, money and banking, and the open economy. Discussion of pertinent current events will complement the textbook. The subject matter of economics relies heavily upon mathematics, and this course will present all necessary economic content along with a solid background of the mathematical concepts. Graphs and equations will be integral aspects of many topics covered in the course. In situations when calculus would be useful, those concepts will be introduced with a perspective from calculus, however, no prior knowledge of calculus will be necessary. Students who find success in this course will be prepared for the AP Microeconomics and AP Macroeconomics exams in May, with some possible topics to fill in.

Course Name**Catalog Description**

Advanced Studies: United States History

Prerequisite: Permission from Department.

Students seeking to enroll in Advanced Studies should be able to work independently as well as contribute meaningfully to student discussions.

This course provides a brief survey of the Colonial period followed by a detailed study of the principal events, personalities, and movements responsible for the development of the United States from colonies into a world power. Designed to challenge students who have demonstrated an interest in the study of history, this course will encourage the development of critical thinking, reading, and writing skills while giving attention to thematic trends in US history across the centuries. The class will rely upon Jill Lepore's *These Truths* as the course's foundational text, supplemented regularly with monographs and primary sources. As they hone their research skills, students will be encouraged to branch from the collective work of the course to pursue areas of specific interest within topic areas.

Advanced Studies: World History

Prerequisite: permission of the department.

This course was created with 10th grade students in mind but is open to students in 11th and 12th grade.

Offered for students who have distinguished themselves in history and whose general profile demonstrates their capability to handle a more complex and demanding syllabus.

Advanced Studies: World History requires a large volume of reading, both in the textbook and primary sources, and a significant amount of in-class writing as well. Students who are ready to challenge themselves and explore the interconnectedness of mankind will do well in the course.

A major emphasis of Advanced Studies: World History is developing the skill to make connections between human cultures and across various time periods. Students must fully engage with the readings and the class discussions in order to participate in the process of following the progress of mankind. The course is organized around a limited number of key concepts instead of a perceived list of facts, events, and dates makes teaching each historical period more manageable. The three to four key concepts per period define what is most essential to know about each period based upon the most current historical research in world history. This approach enables students to spend less time on factual recall, more time on learning essential concepts, and helps them develop historical thinking skills necessary to explore the broad trends and global processes involved in their study of World History. Major themes include interactions between people and the environment, development and interactions of cultures, social structures, and economic systems, and the creation and expansion of states and political systems.

American Studies

Prerequisite: None.

Open to all eleventh grade students.

As a way of looking at the past, American Studies combines traditional aspects of historical inquiry with consideration of art, literature, music, and religion as they contribute to making and in turn reflecting America. Students in American Studies probe the material more deeply than is customary in courses with a survey approach and grapple to make the connections which exist across traditional disciplinary lines. Offered as an alternative to the US History survey course, this offering will approach the development of the American nation by focusing closely on the nation at six critical historical points.

Course Name	Catalog Description
Ancient Mediterranean World	<p>Prerequisite: None.</p> <p>Required for ninth graders.</p> <p>This introductory history course familiarizes students with a worldview that incorporates an understanding of the roots of Western civilization and the adoption of a global perspective. Students grapple with fundamental issues of world history and learn how to think comparatively about the past and to recognize large-scale patterns, including a broad geographical view of the world with emphasis on the pervasive impact of climate, vegetation, and natural resources on historical developments.</p>
History of Race and Ethnicity in the US: Foundations of Ethnic History in the Americas	<p>FALL. This course may be taken individually, or in addition to the other two terms of History of Race and Ethnicity in the U.S.</p> <p>Foundations of Ethnic History in the Americas, will provide the basis for an understanding of race and ethnicity in the United States by considering the development of identity, what informs said identity development, and how access to power, or lack thereof, helps to shape the experiences of groups and individuals alike.</p>
History of Race and Ethnicity in the US: The Civil Rights Era and Beyond	<p>SPRING. This course may be taken individually, or in addition to the other two terms of History of Race and Ethnicity in the U.S.</p> <p>History of Race and Ethnicity in the US: The Civil Rights Era and Beyond, will consider the role race and ethnicity played in the battle for civil rights undertaken by a variety of groups in the mid-twentieth century through present day. An analysis of contributions made through artistic expressions in music, film, and television will be a consistent theme throughout this term.</p>
History of Race and Ethnicity in the US: The Immigrant Experience	<p>WINTER. This course may be taken individually, or in addition to the other two terms of History of Race and Ethnicity in the U.S.</p> <p>History of Race and Ethnicity in the US: The Immigrant Experience, will build on the foundation built in the fall term and consider the range of experiences among immigrants to the United States, paying particular attention to the experiences of immigrants from Asian and Latin American countries.</p>
History of the United States	<p>Prerequisite: None.</p> <p>Open to all eleventh grade students.</p> <p>The United States History survey course is designed to teach students how to “be historians.” This dynamic class will investigate and discuss what historians do and how historians create with limited U.S. content as the vehicle. History is not static information to be learned, but a fluid emergence of ideas and events to be explored. The goal of the class is to get the students to approach history in this manner through the examination of various sources and by completing analytical projects. U.S. History will stray away from the “traditional” approach in a few ways. A text book will not be required for this course, as the teacher will supply either digital or paper handouts to address the various areas of content, providing students the opportunity to perfect their annotation skills in both the digital (using google docs) and paper platforms. The content will focus on 3 major events in U.S. history per term. Context will be given to set up the deeper dive into the particular event, eliminating the “race” through the chronology of U.S. history and allowing a greater focus on developing the skills of an historian. Therefore, lectures and traditional assessments will be limited or eliminated. Small multiple-choice quizzes will be a minor part of the assessments; however, no traditional objective questions, such as true and false, fill in the blank or matching will be used. The majority of assessments will be designed to apprise how the students are engaging content in relation to the historical skills being taught. The end goal is to have active students creating and reacting to</p>

Course Name**Catalog Description**

history, not reciting historical trivia. Topics to be covered: Fall Term: 1. Revolution, 2. Manifest Destiny, 3. Civil War Winter Term 1. Gilded Age, 2. Progressive Era 3. Great Depression Spring Term 1. World War II, 2. 1968, 3. Post Cold War - 9/11

Human Geography

Open to all 10th graders and to 11th and 12th grade who have been approved by the department.

This course examines the complicated relationship between people and the land on which they live. The course utilizes geographic processes to understand how the environment affects people and, in turn, how people change their surroundings. The course is based on a seminar approach with intense writing assignments so that students can explore issues more completely. The course closely follows current events and students are required to keep up with the news throughout the school year. Through relevant case studies and independent projects, students will gain a deep understanding of the modern world in which they live. In the fall term students spend the first five weeks learning geographic terms and gaining skills in geographic technologies such as GIS and Google Earth. Students are required to learn the locations of countries, US states and important geographic features during this first unit. The fall term finishes with an examination of the issues surrounding population changes and migration. During the winter term students learn about food, shelter and language in an effort to understand how these factors reflect geographic issues. The term ends by looking at the complex topics of religion and ethnicity. The spring term focuses on political, economic and environmental topics ranging from micro-loans to global warming. As a culminating project, students are required to design and produce a research essay based on an issue that they found to be compelling during the year.

International Relations and War in the 20th Century

FALL. Prerequisite: concurrent enrollment in or successful completion of US History or American Studies.

The fundamental goal of this course is to introduce students to the ideas and concepts of international relations and war. Students will need to critically analyze different theories and arguments, identifying the strengths and weaknesses, and be able to think about the implications of these arguments. This will provide a basis for better understanding the past, present, and future conflicts in a global society. In short, this course is designed to help students become critical thinkers about international relations and conflicts.

Islamism: Fact or Fiction?

WINTER.

Even before 9/11 the world was aware of the rising tide of Islamic extremism, sometimes referred to as fundamentalism. In this term, students will explore the modern origins of Islamic fundamentalism emerging in the 19th century most notably in the Wahabbi movement and flourishing with the Muslim Brotherhood in Egypt and recently in the Al-Qaeda organization. Students will engage in debate on such questions as: To what extent are these organizations political rather than religious? Do all such organizations manifest their goals in violence? Will such movements be separated from nationalist goals in the 21st century? How do and will organizations' goals affect their level of threat to western societies and values and world security?

Making of the 21st Century: The Quinn-Ferguson Honors Seminar

Prerequisite: concurrent enrollment in or completion of US History or American Studies.

Requires an application be completed to gain entry into this course. Therefore this course is not available to new students.

This unique honors seminar offers a select group of upper-middlers and seniors who have demonstrated a significant ability to work independently and to contribute meaningfully to a seminar style class the opportunity to study key historical developments beginning with the fall of the Berlin Wall in 1989. The seminar will be broad in scope and interdisciplinary in nature.

Course Name**Catalog Description**

Students will analyze major political, economic, social and cultural developments that have shaped the past two decades and that will likely shape the coming decades. Students will engage in research and problem solving in collaborative ways with the goal of gaining depth of understanding and the ability to problem-solve as part of the response to the topics and issues being studied.

The seminar will be mainly be taught by one teacher but will also involve numerous presenters, including current faculty and other experts in their fields of study. In addition to readings and discussions, many of which will be student led, participants in the Quinn-Ferguson Honors Seminar will also engage in significant group projects that may take the form of a debate before the school community, a documentary film, a musical or other artistic performance, or the creation of a website.

It is also expected that travel for lectures, performances or other course-related reasons will be an important part of the seminar experience.

The Arab-Israeli Conflict

FALL.

Students in this course will consider the emergence of Zionism in the 19th century and the forces that led to the creation of Israel following WWII. Students will go on to study major conflicts between Israelis and Palestinians over boundaries and sovereignty. In the second half of the course, students will look at the organized political interests claiming to represent the people on both sides, as well as the forces that push the region into military conflict time and again. Throughout the term, we will be debating the issues of competing claims to ownership of the land, the possibility of a two-state solution, the legitimacy of Hamas as a democratically elected government and the extent of the threat to Israel posed by Iran.

The Cold War

SPRING. Prerequisite: concurrent enrollment in or successful completion of US History or American Studies.

This course addresses East/West relations from 1945 to 1995. It includes superpower rivalry and events in all areas affected by Cold War politics such as spheres of interest, wars, alliances and interference in developing countries. It will aim to promote an international perspective and understanding of the Cold War, which overshadowed world affairs during this period.

The US and the Islamic World

SPRING.

Many explained the September 11 attacks on the United States as the result of a "Clash of Civilizations." This course will explore the relationship between the US and the Islamic world beginning with America's role as a superpower throughout the Cold War and into the twenty-first century. Specifically, students will consider US policy looking at events in the traditional Middle East as well as in Muslim countries such as Turkey, Somalia, Bosnia, Pakistan, Afghanistan, and Indonesia. What drives US national interests in these areas? Are US goals and relationships different due to the Muslim composition of these regions? Deriving from discussions of such questions, students will complete a significant research project on a nation or area of their choosing.

Totalitarian Regimes in the 20th Century

WINTER. Prerequisite: Concurrent enrollment in or successful completion of US History or American Studies.

The 20th century produced many single-party states. The origins, ideology, form of government, organization, nature and impact of these will be studied in this topic. Students will be guided in the study of several regions including South America, Europe, Asia, the Caribbean, and Africa.

World History

Prerequisite: None.

Course Name**Catalog Description**

For tenth graders who elect to take History.

World History builds on the foundations of Ancient History established in the 9th grade and brings the study of history into the modern era. Beginning in the Middle Ages, World History examines the interconnectedness of human development over the past 1500 years. Political events provide a core for the study of history in this course, but social, intellectual, and cultural movements are also examined to give students a sense of how ideas develop and spread across the planet. A major focus of the course is showing how modern human civilizations have always had important interactions and impacts on one another, and that this process has accelerated in recent centuries. Rather than study different regions and nations in isolation, World History attempts to weave these stories together into a global narrative.

Interdisciplinary Studies Department

Interdisciplinary Studies

Activism	In Activism, students consider the criteria that make for effective action while they develop their own sets of criteria for ethical activism. After that, they conduct a personal inquiry to determine the focus of activism that they'll pursue in the winter and spring terms . This course is open to all students of all and any community-appropriate political leaning. Students will be encouraged to share their personal views in the class, even when those views conflict with others in the group.
Application Design	Application Development is a computer programming course that gives students the skills to develop applications that solve real problems or inefficiencies. Students work with multiple programming and scripting languages, as well as a range of hardware supported by those languages. In some cases, the solution may be done in a matter of minutes or hours. In others the solution may take a few weeks or months. Languages include C++, Java, JavaScript, Perl, Python, VisualBasic, Alice, as well as any other established languages students show interest in.
Commarts: The Art and Business of Graphic Design	Commarts provides a yearlong investigation of working in the commercial arts. The students will learn and explore 2-D design and interactive media while developing the business skills of a commercial artist. Students will develop a body of self-directed work as well as a portfolio of client-based material. The students will have the opportunity to learn the hard and soft skills of working with clients as a commercial artist. Students will delve deeply into the principles and elements of design. They will create conceptual art and develop skills with current technology and methodology. A major component of this course will be learning the principles and elements of design. The course will provide the students with a set of tools ranging from technical to conceptual that will allow them to appreciate graphic design as a fine art.
Food for Thought	In Food for thought, students explore these essential questions: How does food drive a curiosity for a deeper understanding of the self? How can food help us tell our personal stories? How does food shape identity and culture and build community? How can food sustain our bodies as well as our minds and spirits? How does food impact our relationship to the environment? What does our shared history look like when examined through the lens of food? This course is immersive and applied, theoretical and personal. Students share family food stories, cook family recipes, visit markets, farms, and restaurants. For enrichment, the course also to brings chefs, restaurateurs, and food writers to campus.
Global Studies Research Thesis - MAPS Core Course	<p>Students must be in the MAPS program in order to take this course.</p> <p>The capstone experience inside MAPS is a senior research project entitled S-E-A-R-C-H, which stands for Study-Engage-Apply-Research-Create-Help. All MAPS students must complete a S-E-A-R-C-H project using the principles of Challenge Based Learning.</p> <p>Senior Year Capstone Project:</p> <p>The purpose of the SEARCH capstone project is to engage with a global issue in a critical, analytical & innovative way.</p> <p>There are three major deliverables over the course of this year.</p> <ol style="list-style-type: none"> 1. Research Paper - Each student will write an original thesis paper. Each research paper will consist of 25 - 30 pages of text (roughly 7,500-10,000 words excluding cover pages, bibliographies, etc.). 2. Proposal - Each student will create an actionable proposal. Each proposal will be a call to action based on the student's research. It may range from proposed legislation to a business proposal to a grant proposal, etc. This proposal will be 10 -15 pages in length.

Course Name

Catalog Description

3. Oral Presentation - Each student will orally present his or her thesis and proposal to a panel. Each presentation will last between 45-60 minutes including a question and answer period.

In addition, students will continue their study of global topics, ranging from geo-political issues, selected areas in human geography to discussions of socio-economic matters. Most students will also present their "Pathfinder" topic early in the fall term and all students will take the Global Assessment Profile. The program director, as well as the TKB and SEARCH coordinators, will meet regularly with students, as a class or individually, for self assessment and review of the overall progress and adherence to the programs requirements.

Maker's Lab

Critical Making/Maker Lab engages in the practice of "making". As practitioners in this course, students use a variety of physical materials and techniques, imagining and creating tangible products inspired by real-world needs in the realms privacy, the environment, education, economics, energy, food, biology, democracy, activism, healthcare, social justice, etc..

Mercersburg Online Radio Station

In Mercersburg Online Radio Station, the students curate music for online streaming; they produce public service announcements, commercials ,and interview podcasts; they collaborate with classmates, developing a variety of quality programming; and each student chooses a topic, researches it, and creates a multi-episode audio series. At some point during the school year, each student is wholly responsible for 24 consecutive hours of programming, which will be review by professionals in the field before it goes online.

Mercersburg's History

Students will learn the connection between historical events both national and international and the parallel effect they had on the Mercersburg Academy--or that the Mercersburg Academy had on them. But beyond learning the history, students will develop the skills to tell the compelling stories of Mercersburg's alumni and faculty were a part of some of the most interesting times and events since 1893, whether on our campus or somewhere around the world. By May, students - using various media - will synthesize archived documents, personal interviews, and broad investigative research in a way that reflects the work of many recent and popular history writers, documentary filmmakers, and radio producers.

Positive Psychology

Positive psychology is a relatively new field that examines why people flourish. It expands psychology's traditional focus on pathology (what's "wrong" with people) to include an emphasis on human strength and virtue. Based on rigorous scientific experimentation, positive psychology explores traits like courage, optimism, empathy, honesty, humility, gratitude, and faith in an attempt to foster a life of meaning and value. This course is modeled on the most popular course in the history of Harvard University.

We will start by introducing the basic tenets of positive psychology through readings, activities, and application to students' lives. After engaging in significant self reflection on their own strengths, students will ultimately in create something -- whether at the personal, institutional, or social level -- that draws on their strengths to make our lives fuller and more meaningful. Student interest will drive each individual final project, with the stipulation that it falls in the framework of positive psychology.

Scriptorium:Recovering Ancient and Medieval Texts

Scriptorium allows students to create (or recover) knowledge by working with manuscripts that have never been made available to scholars, translating them, and publishing editions of them in English. Since many of these manuscripts are in reasonably accessible forms of Latin or proto-French, even students who are not highly skilled at speaking and listening in a second language are able to work with the texts once they have learned scribal hands, scribal abbreviations, and other arcana of the field. Finally, although all language study is by nature interdisciplinary, Scriptorium allows language students to work on topics of particular interest to them, whether it be medieval anatomy, witchcraft prosecutions,

Course Name	Catalog Description
Springboard: Open Topic	<p>music, science, or any other topic.</p> <p>Unlike the other Springboard courses, this course has no predetermined theme. Each student takes a deep dive into a topic they choose; then, through substantive research, they generate unique ideas or solutions to a well-defined challenge that they design, manage, and tackle during the winter and spring terms.</p>
The Fight Against Disease	<p>Disease is among the most pressing issues that humanity faces. Students will work to become experts in a particular disease through their own research; then they'll identify and respond to a challenge related to that disease.</p>
Thought, Knowledge, and Belief - MAPS Core Course	<p>Students must be in the MAPS program in order to take this course.</p> <p>How do we both understand and engage with the world around us? The essential questions in the TKB course are fundamentally evaluative. MAPS students cannot be content with a mere awareness of global issues, but rather they must actively engage in a critical analysis of vital topics facing the world today. Through the study of moral philosophy, students in TKB will examine how essential questions about ethics, society, and the inherent obligations that exist within communities influence their understanding of world affairs. Students will consider such questions as whether there is such a thing as objective good, are there fundamental moral responsibilities, or when do ends justify means. Through the study of ethics and its application to current events, students will also investigate how such ways of knowing as intuition, language, memory, and reason influence perspectives on morality, society, and the obligations of humanity. In sum, TKB asks its students to look critically at themselves, at the world around them, and to form clearly expressed and supported opinions regarding vital issues of the day.</p>
Write Your Novel...	<p>In Write Your Novel, students dedicate themselves to writing a novel...or collection of stories, a play, a screenplay for a major motion picture, or a series of teleplays.</p> <p>By April, each student produces at least a working draft of one of the following:</p> <ul style="list-style-type: none"> - a 35,000 word novel - 25,000 words of short stories - a 2-hour play - a screenplay for a two- hour film - teleplays for three episodes of a television series, including a one-hour pilot.

Language Department

Language

First Year French

Prerequisite: None.

The activities in First Year French engage students culturally as well as structurally while they develop skills in listening, reading, speaking, and writing. French is used in class from the very first day, and listening activities with native as well as non-native speakers are part of students' daily practice. They start speaking French in class through guided but authentic dialogue, conducted in pairs or triads, as vocabulary and verbs are learned and reinforced through daily practice. Students read short poems, articles, and cultural essays. They begin learning to write in French using notes, postcards, and later, letters and poems.

Second Year French

Prerequisite: French 1.

Students continue to practice daily application of the four skills in French: listening, reading, speaking, and writing. French is the language of instruction. Emphasis continues to be placed upon listening and speaking proficiency through frequent small-group activities. Exercises promoting understanding of culture are integrated with mastery of elementary verb conjugation and grammatical structures. Vocabulary is studied in context of both visual and textual reading material. Ability in writing grows from simple sentences to the beginnings of paragraph-length discourse. Authentic situations for the use of French are provided wherever possible. The book series is supplemented by readers to promote discussion.

Honors Second Year French

Prerequisite: French 1 and permission of the department.

While the lexical themes, cultural topics, and structural content of this course are similar to those in French 2, the pace of this course is considerably faster. Supplementary readings are included, such as short stories, poetry, drama, newspaper and magazine articles. Small group work is a daily expectation, allowing students to practice speaking and listening in authentic conversational dynamics. The second term culminates in a project involving a skit or a formal oral report on a researched cultural topic.

French 2H students typically continue in French 3H due to their increased interest and motivation to learn and engage in French.

Honors Third Year French

Prerequisite: French 2H, or French 2 w/ departmental permission.

This course challenges advanced intermediate students to master almost all elements of French in preparation for advanced study. They work with partners and in small groups, speaking on cultural themes and familiar topics. Students' listening abilities are developed daily through intensive work with the teacher as well as with audio and video of native speakers. They read stories, poetry, biographical portraits and articles from newspapers and magazines. Writing assignments are appropriate to advanced French ability, and include cultural research as well as literary interpretation. Some 3H students are successful enough to take Advanced Studies in French Language and Culture without taking French 4.

Third Year French

Prerequisite: French 2 or French 2H.

Course Name

Catalog Description

Students speaking French at level 3 can use the present, immediate future, the past perfect, and the pluperfect, plus the conditional and the subjunctive modes. Students' ability to understand spoken French is honed through daily exposure to native and non-native speakers via video and audio work. Short stories and newspaper articles are included in the reading curriculum. Students practice writing summaries and interpretations in an organized manner in all tenses. Although successful completion of level III work satisfies Mercersburg Academy's language requirement in French, students with permission are encouraged to continue their study at the advanced level.

Fourth Year French

Prerequisite: French 3 or French 3H.

Students in French 4 learn about the francophone world from geographical, historical and literary perspectives. Studies begin with a blend of lyric poetry, fables, fairy tales, odes and sonnets from the 17th and 18th centuries. 19th-century short stories provide elements for deeper stylistic comparison. The Francophone world is presented via 20th century selections from the Francophone world, including material from all five of the continents where French is spoken. Grammar and vocabulary are examined via the readings. Each is presented in conjunction with historical events to expand on context. Linguistic structures and lexical mastery constitute critical elements of this course.

Advanced Studies: French
Language and Culture

Prerequisite: Permission of the department after completion of French 3H or French 4.

All works are in French, so students must enjoy reading to encounter success in this course.

In this course, students integrate varied language skills, applying interpretation and synthesis to both written text and geographically varied aural forms. Students practice both formal and informal writing. They refine their interpersonal and presentational speaking. Aural comprehension is honed via authentic recordings to develop students' comprehension and analytical skills. Evaluations assess both students' comprehension of content and their application of skills. They read excerpts from wide-ranging sources, presenting diverse stylistic choices and linguistic forms. Students explore international current events and present reactions to them.

Advanced Studies: Francophone
History, Literature, and Culture

Prerequisite: Advanced Studies in French Language and Culture, or in unique cases, French 4 and permission of the department.

Students must enjoy reading to encounter success in this course.

This course introduces advanced students to the scripted study of a representative body of literary selections, presented in their historical context. Students examine and appreciate culturally rich art and music. They learn the techniques of literary analysis, as well as a basic vocabulary of critical terms. Students apply strategies for connecting historically significant events and people to varied literary and stylistic structures. Reading, discussion, and writing in French are essential components. Students also delve into contemporary culture, asserting declarative knowledge of the past events that inform current practices.

First Year German

Prerequisite: None.

Course Name

Catalog Description

The activities in First Year German engage students culturally as well as structurally while they develop skills in listening, reading, speaking, and writing. German is used in class from the very first day, and listening activities with native as well as non-native speakers are part of their daily practice. They start speaking German in class through guided but authentic dialogue, conducted in pairs or triads, as vocabulary and verbs are learned and reinforced through daily practice. Students read short poems, articles, and cultural essays. They begin learning to write in German using notes, postcards, and later, letters and poems.

Second Year German

Prerequisite: German I.

Students continue to practice daily application of the four skills in German: listening, reading, speaking, and writing. German is the language of instruction. Emphasis continues to be placed upon listening and speaking proficiency through frequent small-group activities. Exercises promoting understanding of culture are integrated with mastery of elementary verb conjugation and grammatical structures. Vocabulary is studied in context of both visual and textual reading material. Ability in writing grows from simple sentences to the beginnings of paragraph-length discourse. Authentic situations for the use of German are provided wherever possible. The book series is supplemented by readers to promote discussion.

Honors Second Year German

Prerequisite: German I and permission of the department.

This course is offered to students who have shown the necessary skills, motivation, and desire to pursue the study of German after the first year of German at a more accelerated pace than the regular first year course. In this honors course, students will continue to follow the German 2 syllabus with all of its contents but it will also include intermediate and advanced grammar and vocabulary topics from a variety of resources in addition to the German 2 textbook and workbooks. The application and practice of these beginning and intermediate topics will include more comprehensive and demanding writing, reading, listening, and speaking assignments than the regular German 2 level course. The main difference between the regular 2nd year course and the 2 H course, however, is the pace, the overall class expectations, and the desired proficiency achievement in all four language skills. A successful completion of the course may result in a recommendation to continue the study of German in the German 3 H course.

Third Year German

Prerequisite: German II.

Students speaking German at third-year level will use the present, future, and present perfect, as well as other past tenses plus the conditional and the subjunctive modes. Their ability to understand spoken German is honed through daily exposure to native and non-native speakers via video and audiocassette work. Short stories and newspaper articles are included in the reading curriculum. Students practice writing summaries and interpretations in an organized manner in all tenses. Although successful completion of third-year level work satisfies Mercersburg Academy's language requirement in German, students with permission are encouraged to continue their study at the advanced level.

Fourth Year German

Prerequisite: German III.

Students in this course deepen their awareness and understanding of German culture. Literature, film, magazine and newspaper articles, songs, web sites, radio interviews, software, and a book series combine to form the core materials of the curriculum. Students gain a profound

Course Name**Catalog Description**

understanding of the various cultures of the German speaking world from historical, literary, and sociological perspectives, in authentic contexts wherever possible. Themes studied include education, changing family roles, immigration, ethnic identity, class, media influences, and intercultural contact.

First Year Latin

Prerequisite: None.

This course introduces students to the fundamentals of classical language study through vocabulary acquisition, grammar instruction, and translation of culture-based passages. Students learn to compare the mechanics of the Latin language with their native language and also develop a wider English vocabulary through their exposure to Latin roots. The primary skill of reading is emphasized, though pronunciation of the language and manipulation of the Latin language support the overall goals of the course. Using a technology-based curriculum, Latin students research and present aspects of Roman culture and history in preparing to take the first level of the National Latin Exam.

Second Year Latin

Prerequisite: Latin I.

Students continue their study of Latin grammar and Roman culture and begin to translate longer and more complex prose. By reading and discussing interesting authentic and graded texts, students develop their interests in mythology and Republican and early imperial era Roman culture and become familiar with the uses of the subjunctive, infinitives, and all case uses. Students learn to break down and etymologize Latin words in order to expand their reading vocabulary. Activities include web based practice and research, word derivation, and more advanced presentation skills.

Honors Second Year Latin

Prerequisite: Latin I and permission of the department.

Students will master the basic vocabulary and advanced grammatical structures of classical Latin while making a swift transition from 'made' Latin into authentic Roman texts. The pedagogy of this course will favor the grammatical method rather than the reading method in order to utilize the students' strengths in memorization and linguistic acquisition.

Third Year Latin

Prerequisite: Latin II or Latin II H.

Students in the lyric class get a wide exposure to poetry and prose in Latin from the imperial to later Latin, including medieval writing. Students enter with a strong grammar background and review more advanced grammatical concepts and forms including gerunds, subjunctive constructions, and indirect discourse. Genres within Latin literature are sampled and compared, but with an emphasis on the lyric tradition and mock epics of Catullus and Ovid. Student learn how to evaluate and recognize meter in poetry and its significance within the poem, as well as how to recognize and comment on rhetorical devices used by the authors.

Honors Third Year Latin

Prerequisite: Latin II

This course reviews all grammatical and morphological info covered in Latin II and covers the basic third-year level course materials in the first two terms, moving into AP level writing skills and texts in the spring term. This will be a year-long accelerated course in which students will master the advanced grammatical structures of classical Latin while making the transition from 'made' Latin into authentic Latin texts. The pedagogy of this

Course Name**Catalog Description**

course will favor vocabulary acquisition and grammatical structures using the subjunctive, indirect statement, and the passive periphrastic.

Fourth Year Latin

Prerequisite: Latin III or Latin III H or permission of the department.

This course studies the traditions of Latin lyric poetry especially as practiced by Catullus, Ovid, and their contemporaries. The texts include *Carmina Catulli* and Ovid's *Metamorphoses* and *Amores*. Students learn to use primary and secondary sources for critique and analysis of the text and develop essay-writing skills in order to analyze the authors' different approaches and goals. They build an understanding of meter and rhetorical devices used by the lyric poets and, more importantly, discover how such secondary techniques support the authors' purposes. The course presupposes a fairly sophisticated understanding of Latin forms and vocabulary as well as competency in translating basic Latin texts, though some review continues through the course of the year.

Advanced Studies: Latin
Literature

Prerequisite: Latin AP or by permission of the department.

This course studies the traditions of Latin lyric poetry especially as practiced by Catullus, Ovid, and their contemporaries. The texts include *Carmina Catulli* and Ovid's *Metamorphoses* and *Amores*. Students learn to use primary and secondary sources for critique and analysis of the text and develop essay-writing skills in order to analyze the authors' different approaches and goals. They build an understanding of meter and rhetorical devices used by the lyric poets and, more importantly, discover how such secondary techniques support the authors' purposes. The course presupposes a fairly sophisticated understanding of Latin forms and vocabulary as well as competency in translating basic Latin texts, though some review continues through the course of the year.

Advanced Studies: Latin

Prerequisite: Latin third-year level or by permission of the department.

This course follows the Vergil AP syllabus, studying the traditions of Latin lyric and epic poetry in their historical and literary contexts. The course relies on primary and secondary sources for critique and analysis of the literature and stresses essay-writing skills and technical analysis of the text.

First Year Spanish

Prerequisite: None.

The activities in this beginning level course engage students culturally while they develop listening, reading, speaking, and writing skills. Spanish is used in class from the very first day, and classroom immersion games are part of students' exposure to the language. Vocabulary and verbs are learned and reinforced through daily practice. The course emphasizes the learning of the present tense and basic grammatical structures with an introduction to other tenses. Students read short cultural articles and stories that serve as a continuous point of departure for the introduction and discussion of cultural topics related to Spain and Latin America.

Accelerated First Year Spanish

Prerequisite: Departmental approval is required.

Spanish I accelerated targets the needs of three groups: capable students whose previous academic Spanish study falls short of our level two placement; students whose knowledge of Spanish is primarily non-academic ("heritage learners"); and international students who have already mastered another language. Highly mixed knowledge of Spanish words and cultures is typical of groups one and two. International students' more

Course Name**Catalog Description**

traditional language learning tools may offer balancing factors. Thus, one goal of the course is to blend respect for all students' valid but diverse experiences with standardized learning outcomes. This results in the more likely advent of literacy for all.

Second Year Spanish

Prerequisite: Spanish I.

Students continue to practice the daily application of the four skills in Spanish: listening, reading, speaking, and writing. After a brief review of the present tense, students learn to use more complex grammatical structures and additional vocabulary and verb tenses. Emphasis is placed upon the study of the two past tenses in Spanish, the preterit and the imperfect. Readings are continued as a medium to explore cultural themes of Spain and Latin America.

Honors Second Year Spanish

Prerequisite: Spanish I and permission of the department.

The Spanish II H level is designed for students who have demonstrated mastery of the skills employed in Spanish I at an advanced level. Students must demonstrate high interest and motivation for this level of study. This course is not solely text-centered; instead it relies on outside readings, music, cultural texts and other realia. Spanish is used exclusively in the classroom. Oral and written proficiency is stressed in preparation for the third-year composition and conversation curriculum.

Honors Third Year Spanish

Prerequisite: Spanish II or II H and permission of the department.

The class is conducted entirely in Spanish and students are expected to be able to participate accordingly.

This course, conducted entirely in Spanish, is an advanced intermediate language course designed to meet the needs of students who have demonstrated superior skills and interest in learning the Spanish language. The primary learning objectives of the course are fluency and cultural competence. Through aural/oral communication, grammar review, literature, and composition, students will have an active experience while learning. Students read, discuss, and write about a variety of current topics of interest, read materials including but not limited to short stories, poetry, and plays highlighting various regions of Spanish speaking heritage. The active study of grammar and language structure is an important component of the course, with the goal being to employ advanced grammar in creative compositions and conversation.

Successful completion of Spanish III H may allow students to enroll in Advanced Studies: Spanish Language and Culture course.

Third Year Spanish

Prerequisite: Spanish II or II H.

This is an intermediate course in which students read and discuss authentic short stories, news items, poetry, art and popular culture from Spain and Latin America. In this course the students sharpen their skills in the present, past tenses, future, compound tenses, and the subjunctive mood and acquire more complex vocabulary. An emphasis is placed on the equal practice of the four uses of language: listening, writing, reading and speaking. Although the successful completion of third-year level work satisfies Mercersburg Academy's graduation requirement, students with permission are encouraged to continue their study at the advanced level.

Course Name**Catalog Description**

Fourth Year Spanish

Prerequisite: Spanish III or III H.

This course is a survey of different literary genres found within Spanish and Latin American written works. Students will explore prose and verse from the 16th century to the present along with links to folkloric music while developing their language skills and honing their vocabulary through round table discussions of their readings, follow up essays, and investigative projects. Existing parallel themes with the history, culture, and contemporary ideas of the Hispanic world are also examined. Authentic materials such as articles, web sites, films, software, and videos are used to provide further listening and speaking practice.

Successful students can continue their studies in Spanish by moving into the Advanced Studies: Spanish Language and Culture course.

Advanced Studies: Spanish
Language and Culture

Prerequisite: Spanish IIIH or Spanish IV and permission of the department.

This is a demanding language course offered by the Spanish Section. Its rigorous aim and objective makes it equivalent to a third-year college course. The course develops intense listening skills with texts of different lengths, detailed reading comprehension, effective composing of essays based on both written and oral sources, and spontaneous creating of formal and informal oral responses corresponding to both conversational and presentational situations.

Students who complete the course may continue to the Advanced Studies: Survey of Hispanic Literature course.

First Year Chinese

Prerequisite: None.

This course in Chinese language (Mandarin) introduces Pinyin (a Romanization system), components of Chinese characters in simplified (as opposed to traditional) forms, and basic grammatical features and sentence patterns. It emphasizes the acquisition of a solid command of Chinese sounds and tones and developing conversational skills through classroom exercises and continual exposure to audio-video texts. The learning of speaking, listening, reading and writing skills is conducted in contexts that are both culturally informative and relevant to everyday life language usage.

Second Year Chinese

Prerequisite: Chinese I

Chinese II reinforces the content covered in the previous year and continues to inform grammatical knowledge and develop language skills in all areas. It is intended for students to reach a higher level of precision in pronunciation and fluency in aural-oral communication on familiar topics. In conjunction with a decreased dependency on Pinyin, which is basically a tool for learning of Chinese sounds, the course deals with reading and writing more intentionally and systematically to allow students to become well-rounded learners and communicators in the Chinese language.

Third Year Chinese

Prerequisite: Chinese II

Like the other Chinese courses, Chinese III continues to place strong emphasis on the development of students' oral proficiency. Without compromising the importance of using relevant and day-to-day contexts to facilitate learning, this course orients students toward a higher level of

Course Name**Catalog Description**

emotional and evaluative expressions in all skill areas. Over the course of the year, students tackle an increasing number of grammatical and syntactic features that are Chinese-specific to enhance accuracy and expressiveness in communication. Students will be introduced to the development of Chinese society in China and Taiwan through films and participation in cultural events. In order to enhance their interaction with native Chinese speakers, they will engage with their Chinese peers on campus via various assignments and interview projects.

Fourth Year Chinese

Prerequisite: Chinese III

This course strengthens and further develops students' aural-oral communication skills required for daily functions and authentic expression of ideas as results of higher order thinking. In conjunction with this goal, the course also emphasizes the acquisition of more Chinese characters and vocabulary to enhance reading and writing Chinese texts of different genres. It continues the introduction of new lexical and syntactical features to help students toward the mastery of a core Chinese grammar. Students in the course approach learning through disciplined practice and communicative tasks in and outside of class.

Advanced Studies: Survey of
Hispanic Literature

Prerequisite: AS: Spanish Language or permission of instructor.

This course will present opportunities for advanced students of Spanish literature to explore three genres: the fable, the short story and poetry. Each genre will be presented in one of the three terms. The fable constitutes the origin of many current cultural sayings and proverbs; as such it remains relevant. The short story survey includes historical events that distinguish the cultural perception and approach of short stories in Spain with that of Latin American countries. Lastly, the poetry presents a mixture of both Spanish and Latin American poets, as well as anonymous poems with strong historic background.

Math Department

Mathematics

Accelerated Algebra II

Prerequisite: Algebra I and Geometry.
 SSAT scores between 650 and 725 or PSAT scores below 610.
 Recommendation of the department required.

In this course, real and complex numbers, algebraic expressions, and solutions of mathematical statements are applied to the study of elementary functions and their application to a variety of problem situations. This more rigorous course in topics of algebra completes the graduation requirement in mathematics, and includes an introduction to statistics.

Accelerated Geometry

Prerequisite: 95 or higher in Algebra I.
 SSAT quantitative score at 725 or above.
 Excellent work ethic.
 Recommendation of the department.

This course, offered by invitation of the department to students with strong aptitude in mathematics, will examine additional topics in geometry and will approach the review and further study of algebra in preparation for Algebra II.

Accelerated Precalculus

Prerequisite: Algebra II Acc or the equivalent and recommendation of the department.
 For students who had grades consistently above 88 in Algebra II Acc at Mercersburg Academy.
 PSAT scores above 560 are recommended.

This is a course for students who have demonstrated solid ability and motivation in their study of intermediate algebra. In addition to the extension of the work with the elementary functions from Algebra II, topics include trigonometry, polynomial and rational functions, inverses, exponential and logarithmic functions. Graphing calculators are used extensively. The course is designed to foster the mathematical maturity needed for the study of advanced math courses at Mercersburg Academy and mathematics and related courses in college.

Advanced Studies: Calculus I

Prerequisite: Final course grade of at least 88 in Accelerated Precalculus.
 ACT at least 27, PSAT at least 560, or SAT-M at least 600.
 Recommendation of the department.

This course aligns with most traditional college Calculus I classes and covers a similar curriculum. It is a rigorous course requiring a strong level of commitment and is intended for students with evidence of a high level of success in mathematics and a desire to study mathematics at a higher level before entering college. Topics include limit theory, differential calculus, introductory integral calculus, and applications related to these topics. Time permitting, an introduction to elementary differential equations may also be discussed.

Advanced Studies: Calculus II

Prerequisite: final course grade of at least 90 in Honors Precalculus.
 ACT at least 32 or SAT at least 700.

Course Name**Catalog Description**

Recommendation of the department.

This course covers the material in Advanced Studies: Calculus I plus additional topics traditionally covered in a college level Calculus II course. The additional material covers topics in polar, parametric, and vector functions, Taylor and Maclaurin series, and additional topics as determined by the instructor. The course is rigorous and presumes a very solid background, demonstrated aptitude, and a strong commitment on the part of the student. The appropriate section for each student is determined based on background and aptitude.

Advanced Studies: Calculus III

Prerequisite: Successful completion of Advanced Studies: Calculus II and/or recommendation of the department.

This demanding course continues on the usual path of college-level mathematics for students interested in careers in mathematics, physics, and engineering. The content focuses on material typically found in a traditional Calculus III course. Multiple integrals, partial derivatives, vector functions and abstract linear algebra are among the topics studied.

Advanced Studies: Computer
Science A

Prerequisite: Some prior experience with coding and recommendation of the department.

Prerequisite may be fulfilled by successful completion of Robotics, Foundations of Technology, prior coding course at a previous school, or summer preparatory work.

Students with no prior coding experience who opt for the summer work will need to show evidence of completion before enrolling in the course.

This course is broken into 2 parts, the 1st term as an intro into all the topics we will cover for the full year and the final 2 terms where we will get deep into using all of the topics. The full course would cover much of the current AP CS AB course, so students would need to do a little extra work, but should be prepared to challenge the exam if they choose to. The course will be taught using a number of free online resources, the text, Java Methods is recommended, but not required.

Major Topics Covered:

Object-Oriented Programming,
Primitive Data Types / Variables,
Character Strings,
Loops,
Arrays,
Array Lists,
Class Design / Inheritance,
Logic Statements,
Recursion

Advanced Studies: Economics

Prerequisite: Algebra II and a combined SAT score (CR & M) of 1100 or ACT score of 27 is required.

Course Name**Catalog Description**

Recommendation of the department required.

Open to 11th and 12th graders. This course can also be taken to earn credit in History.

A full-year course in Microeconomics and Macroeconomics, with Microeconomics covered in the first half of the year and Macroeconomics covered in the second half. The year will begin with basic concepts in economics, including opportunity cost, production possibilities curves, and analysis of the margin. Topics in Microeconomics include supply and demand, taxes, externalities, costs, the theory of the firm, and the labor market. Topics in Macroeconomics include growth and GDP, inflation and CPI, saving and investment, unemployment, money and banking, and the open economy. Discussion of pertinent current events will complement the textbook. The subject matter of economics relies heavily upon mathematics, and this course will present all necessary economic content along with a solid background of the mathematical concepts. Graphs and equations will be integral aspects of many topics covered in the course. In situations when calculus would be useful, those concepts will be introduced with a perspective from calculus, however, no prior knowledge of calculus will be necessary. Students who find success in this course will be prepared for the AP Microeconomics and AP Macroeconomics exams in May, with some possible topics to fill in.

Advanced Studies: Statistics

Prerequisite: Successful completion of Algebra II.

Combined SAT score (CR & M) of 1100 or ACT score of 27 is required, or recommendation of the department.

Open to 11th and 12th graders.

Data analysis, survey and experimental design, modeling, probability, and statistical inference are among the topics covered. This course is excellent preparation for college-level courses in a number of disciplines. This is an engaging and rigorous course that demands strong reading comprehension as well as sound mathematical reasoning.

Algebra I

Prerequisite: Recommendation of the department

This course emphasizes a strong understanding of algebraic concepts and the development of technical ability. There is adherence to logically sound mathematics in the presentation of topics, but the student's own ability to reason logically is allowed to develop gradually while mechanical skills are stressed. There is an early and continued emphasis on the usefulness of mathematics in modeling real-world situations.

Algebra II

Prerequisite: Algebra I and Geometry.

The department may recommend this course for strengthening important skills in preparation for Precalculus.

In this course, students will strengthen their understanding of algebraic concepts and technical ability through the investigation of elementary functions and a problem solving situations. Acquisition of skills is emphasized with use of the graphing calculator. This course completes the graduation requirement in mathematics.

Course Name**Catalog Description**

Calculus I

Prerequisite: Successful completion of Precalculus and recommendation of the department.

This class serves the student who wishes to study calculus at a less demanding pace than that of the Advanced Studies level. Technology will be utilized to teach the practical applications of calculus. The course will thoroughly prepare students for a first-year college course in calculus, and will provide a sound culminating experience for students whose future plans do not include additional study of mathematics. This course offers an ideal alternative for 11th and 12th graders who do not qualify for the Advanced Studies level but are interested in studying advanced mathematical topics in preparation for college.

Foundations of Technology

SPRING. Prerequisite: None.

This is an introductory course designed to give students knowledge and skills in technological problem solving, design, computer programming, electronics, machines, tools, and 3D modeling. This course is ideal for students interested in careers in STEM, engineering, computer programming, and robotics. This course qualifies as a prerequisite for Computer Science.

Geometry

Prerequisite: Algebra I.

A course consisting of traditional topics in plane geometry and review and extension of notions of elementary algebra, with particular emphasis on geometric applications and introductory coordinate geometry.

Honors Algebra II

Prerequisite: Exemplary performance in Algebra I, Accelerated Geometry.

SSAT at least 725 or PSAT at least 610.

Recommendation of the department.

This course, for highly motivated students, moves at a faster pace and in greater depth than standard courses. When considering students for this course the department seeks evidence of strong aptitude, quick and in-depth comprehension, and a distinguished performance in past mathematics courses.

Honors Precalculus

Prerequisite: Honors Algebra II or the equivalent and recommendation of the department.

For highly motivated students with SSAT at least 725 or PSAT at least 610.

A strong background in trigonometry is necessary.

This honors course moves at a fast pace with much greater expectations than standard courses. When considering students for this course, the department seeks evidence of strong aptitude, sustained effort, quick and in-depth comprehension, and a distinguished performance in past mathematics courses. Topics include: trigonometry review; polar coordinates and parametric equations; vectors in two and three dimensions; systems of equations and inequalities; matrix operations; conic sections; sequences and series; counting and probability; limits and derivatives.

Precalculus

Prerequisite: Algebra II or the equivalent and recommendation of the department

Course Name**Catalog Description**

A precalculus course with emphasis on data analysis, properties of functions, logarithms, and trigonometry. Emphasis is placed on using graphing calculators to do calculations accurately and to learn mathematical principles.

Robotics I

FALL. Prerequisite: Completion of Algebra II and completion of the physical science requirement.
Interest in math and success in at least Algebra II.

Open to 11th and 12th graders. This course can also be taken to earn credit in Science.

This course combines skills in mathematics, physics, and computer programming in order to learn the basics of robotics. An introduction to programming, simple machines, sensors, and movement are studied in order to build autonomous robots. Classtime is spent working on building robots and projects will be given on a daily and weekly basis. A final project will be given in lieu of an exam.

Robotics II

WINTER. Prerequisite: Robotics I
Interest in math and success in at least Algebra II.

Open to 11th and 12th graders. This course can also be taken to earn credit in Science.

This course builds on the knowledge obtained in Robotics I. Topics covered will include complex machines, advanced programming algorithms, and complex movement and sensor capabilities. A focus will be placed on teamwork when completing tasks. Classtime is spent working on building robots and projects will be give on a weekly and bi-weekly basis. A final project will be given in lieu of an exam.

Robotics III

SPRING. Prerequisite: Robotics II
Interest in math and success in at least Algebra II.

Open to 11th and 12th graders. This course can also be taken to earn credit in Science.

This course builds on the knowledge obtained in Robotics I and Robotics II. This course will spend its time focused on complex robotics projects which groups will tackle for the duration of the term. Teamwork and time management are critical elements to completing the tasks. The course combines elements of mathematics, programming, and physics in engineering design problems which students must build robots to solve. Classtime is spent working on building robots and projects will be given for the term. Grades will be calculated on the basis of meeting certain milestones throughout the term.

Statistics

Prerequisite: Successful completion of Algebra II.
Open to 11th and 12th who are interested in the practical topics of statistics.

This course addresses the fundamentals of exploratory data analysis or how to 'let data speak.' Students will learn key elements of elementary data analysis, experimental design, survey design, the normal model, linear modeling, probability, and an introduction to inference. The emphasis in this course will be on the statistical thinking behind data gathering and interpretation. Statistical techniques will be applied to a wide variety of

Course Name**Catalog Description**

subjects, including natural science, economics, business, psychology, and politics. Students will engage in numerous hands-on activities in class to reinforce topics and will also be asked to conduct several statistical projects throughout the course of the year. The reasoning process involved in statistical analysis will be emphasized more than the computational methods. This course will help students become discerning consumers of statistics, teaching them to analyze the numbers from surveys, election polls, and medical studies.

Religion Department

Religion

Introduction to New Testament: The Gospels
Through Stained Glass

WINTER, SPRING. Prerequisite: None.

Open to all students in 10th, 11th, and 12th grade.

This course examines the life and times of Jesus of Nazareth through the stained glass in the Irvine Memorial Chapel. Emphasis will be placed on the four Gospels and understanding their depictions in the Chapel. Students will not only learn the political/religious/social context of the teachings of Jesus, but the criticism that surrounds this figure. Attention will also be focused on basic elements of stained glass, their role in the church, and the history of the Mercersburg Chapel.

Introduction to World Religions

FALL, WINTER, SPRING. Prerequisite: None

Open to all students in 10th, 11th, and 12th grade.

This course explores the religious dimension of human existence by close examination of three major non-Western faith traditions. With careful attention to particular religious themes and existential questions common to each of the traditions, we aim to develop an understanding of the theory and vocabulary necessary to engage critically religious faith and practice as embodied in individuals and communities. Emphasis will be given to the study of doctrinal beliefs, religious histories, sacred texts, and cultural expressions. This course is not designed to inspire faith or conversion. Rather, it aims to provide intellectual challenge, and to encourage deeper levels of understanding and appreciation for the religious dimension of human existence. In particular, we will attend to the existential questions: Where did we come from? Where are we going? How are we to live as authentic human beings?

The Nature and Meaning of the Universe

FALL, WINTER, SPRING. Prerequisite: Bio Molecular, Bio Macro, or its equivalent. Corequisite: Power/Justice H or higher. Other students must obtain permission from the department to enroll in this course.

This course is most suitable for 10th, 11th, and 12th graders with a strong interest in philosophy, science, and religion.

This course will include discussions of the following areas: understanding the nature of truth, proof, and knowledge; faith vs. empiricism; cosmology vs. mythology; the question of design; the origin of life, evolution vs. creation; and scientific/medical ethics. While the course will earn credit in and fulfill the requirements of the religion department, it will frequently be team-taught with a member of the science department.

Understanding Religion: The Amish

FALL. Prerequisite: None.

This course will engage students in the study of lived and formal religion. It will address various elements found in all religions, such as codes of belief, practices associated with a religion, religious ritual and how community is associated with religion. In focusing on these elements, students will gain a better understanding of how a religion functions. While examples will be used from various world religions, the course will consistently use the Amish as a case study for understanding various tenants of a religion. Students will wrestle with how the Amish balance life within their religious community and the wider world and how this affects their daily life. Students will also take a field trip to Lancaster County to visit the Amish.

Science Department

Science

Advanced Studies: Computer Science A

Prerequisite: Some prior experience with coding and recommendation of the department. Prerequisite may be fulfilled by successful completion of Robotics, Foundations of Technology, prior coding course at a previous school, or summer preparatory work. Students with no prior coding experience who opt for the summer work will need to show evidence of completion before enrolling in the course.

This course is broken into 2 parts, the 1st term as an intro into all the topics we will cover for the full year and the final 2 terms where we will get deep into using all of the topics. The full course would cover much of the current AP CS AB course, so students would need to do a little extra work, but should be prepared to challenge the exam if they choose to. The course will be taught using a number of free online resources, the text, Java Methods is recommended, but not required.

Major Topics Covered:

Object-Oriented Programming,
Primitive Data Types / Variables,
Character Strings,
Loops,
Arrays,
Array Lists,
Class Design / Inheritance,
Logic Statements,
Recursion

Advanced Studies: Physics C: Mechanics

Prerequisite: Honors Physics (with an average of 90 or above), 650 SAT Math score. Concurrent enrollment in Calculus (AB).

Student must demonstrate excellent work habits.

Permission of the department is required.

This course follows the College Entrance Examination Board Advanced Placement syllabi with certain other topics included. Adequate performance on a written examination in the spring may enable the students to earn college credit.

Topics covered: Motion in one dimension, vectors, motion in two dimensions, forces, Newton's Laws of Motion, work and energy, power, conservation of energy, linear momentum, collisions, impulse, statics and equilibrium, rotation, torque, angular momentum, gravitation, oscillations.

Advanced Studies: Biology

Prerequisite: Bio Molecular or Bio Macro and Chemistry each with a yearly average of 90 or above (or Honors Chemistry with an average of 85 or

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above).

Permission of the department is required.

This course follows the newly redesigned College Board's Advanced Placement syllabus with certain other topics included. The AS: Biology course is designed to offer students a solid curriculum in evolutionary biology concepts centered around four 'Big Ideas':

Big Idea 1: Evolution drives the unity & diversity of life.

Big Idea 2: Biological systems utilize energy to maintain homeostasis for survival.

Big Idea 3: Living systems store, retrieve, and transmit information generation to generation.

Big Idea 4: The interaction of biological systems with each other and abiotic factors possess complex properties.

This course shifts from a traditional 'content coverage' model of instruction to one that focuses on enduring, conceptual understandings and the content that supports them. Students will spend less time on factual recall and more time on inquiry-based learning of essential concepts which will help them to develop the reasoning skills necessary to engage in the science practices.

Advanced Studies: Chemistry

Prerequisites: Honors Chemistry with a yearly average of 90 or above; concurrent enrollment in Precalculus ac or higher.
600 SAT math score.

Departmental permission required.

This course will expose students to college level chemistry, giving them the opportunity to study chemistry from a variety of sub-disciplines including but not limited to general chemistry.

The curriculum focuses on the following 6 Big Ideas:

Big Idea 1: The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.

Big Idea 2: Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.

Big Idea 3: Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.

Big Idea 4: Rates of chemical reactions are determined by details of the molecular collisions.

Big Idea 5: The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.

Big Idea 6: Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive

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to initial conditions and external perturbations.

Advanced Studies:
Environmental Science

Prerequisites: One year of a life science and one year of a physical science (chemistry or physics) with a grade of 85 or better (or 83 or better in an honors class).

Note: Open to 11th and 12th graders who had grades of 85 or better in Chemistry or Physics or who had grades of 83 or better in Chemistry H or Physics H.

Environmental Science is the study of the natural sciences in an interdisciplinary context that includes the consideration of people and how they have influenced the environment. Students will use a variety of methods (field studies, case studies, lab analysis and Internet research) to explore and understand the many aspects of biology, ecology, earth and atmospheric science, chemistry, physics, and human population dynamics that are interrelated in the study of environmental science. The course follows the College Board's Advanced Placement syllabus with other topics included.

Advanced Studies: Physics C:
Electricity and Magnetism/
Mechanics

Prerequisites: Honors Physics with an average of 90 or above and an AP Exam score of 3 or above.

700 Math SAT or 31 Math ACT.

Concurrent enrollment in AP Calculus (BC) OR completion of AP Calculus (AB) with an average of 90 or above OR completion of Precalculus Honors with a year average of 85 or above and concurrent enrollment in AP Calculus (AB).

Student must demonstrate excellent work habits.

Permission of the department required.

Mechanics Topics Covered: Motion in one dimension, vectors, motion in two dimensions, forces, Newton's Laws of Motion, work and energy, power, conservation of energy, linear momentum, collisions, impulse, statics and equilibrium, rotation, torque, angular momentum, gravitation, oscillations.

Electricity and Magnetism Topics Covered: Electric charge, electric fields, Coulomb's Law, Gauss' Law, electric potential, capacitance, current and resistance, circuits, Kirchoff's Laws, RC circuits, magnetic fields, Ampere's Law, Faraday's Law, induction, RL circuits.

This course follows the College Entrance Examination Board syllabus.

Applied Human Anatomy &
Physiology

Prerequisite: Biology.

Preference given to grades 11 and 12.

The subject matter of this course is designed to build on a student's previous experience in Biology and delve deeper into the individual systems of

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the human body. In addition to the anatomy of each system, students will learn the physiological basis for the respiratory, circulatory, excretory, musculoskeletal, endocrine and nervous systems. Students will then use this knowledge to recognize, evaluate and treat common wilderness injuries. These conditions include, but are not limited to, soft tissue and skeletal injuries, head and spine trauma, infections, and environmental injuries. This course is lab intensive and will include field trips for extensive practical application and evaluation of knowledge and skills. At the completion of the course students will be certified in CPR from the American Red Cross and also potentially receive Advanced Wilderness First Aid certification, recognized by DOT departments nation wide, from SOLO, the leader in wilderness and emergency medicine.

MOE instructors will be involved in the teaching and evaluation of all of these skills.

Biology: Molecules, Evolution and Genetics

Prerequisite: None.
Grade level: 9 or 10.

This course is an introductory-level biology course for students who are interested in questions about life that can only be answered at the molecular level. The topics included in this course are: evolution, the structure of biological molecules, cellular membranes and transport, enzyme action, the role of DNA in a cell, nuclear and cellular division, and genetics. This course, like Bio Macro, develops the basic skills that Mercersburg wants all biology students to master: use of the scientific method, proper design of experiments, use of proper sampling methods, ability to collect data and analyze it, scientific writing, microscope use, dissection techniques, and oral presentations with diagrams.

Chemistry

Prerequisite: Successful completion of Biology and Algebra I
Corequisite: Geometry or higher.

Ninth graders are discouraged from taking this course.

Students in this course will be learning the traditional chemistry topics while exploring environmental and societal issues. Each unit in this course introduces a practical application that serves as an outline to guide the learning of chemistry concepts and problem solving. The course is highly laboratory based which will require students to apply what they have learned.

Forensic Science

SPRING. Prerequisite: Biology Mol or Biology Eco or the equivalent.

Grade Level: 10, 11, or 12.

The forensic science class will incorporate elements of life science, physical science, mathematics, and criminal justice disciplines to introduce students to the role of science in the criminal justice system. The class will be lab based, with each lab unit focused around one type of analysis would be used to solve a crime. Case studies from real life crimes will be read and analyzed and related to lab.

Honors Chemistry

Prerequisite: High grades in math and 90% or higher in biology; demonstrated strong work ethic.
A high SSAT math score (around 700 or higher).
Corequisite: Geometry ac, Algebra II H, Algebra II ac, Precalculus ac or higher.

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Honors Chemistry (Chemistry H) is a year-long course which explores the physical and chemical properties of matter, developing an understanding of the composition of matter and the changes in composition which matter undergoes. It puts special emphasis on quantitative calculations using models of physical behavior developed through laboratory experience. The main focus of the course is to help students become confident, independent problem solvers. This course is designed to move at a fast pace. Students who do well in this course will be prepared to take AS: Chemistry.

Honors Physics

Prerequisite: 600 Math SAT or 26 Math ACT (minimum).
Corequisite: Math Precalculus ac or higher.

There is an expectation of facility and comfort with geometry, trigonometry, and algebra, without which students could have great difficulty, especially in the second term.

Ninth graders are discouraged from taking this course. Grade Level: 10, 11 or 12.

A more advanced year course whose principal emphasis is the development of the students' understanding of the physical world. Understanding of traditional high school physics topics will be developed through the extensive use of the laboratory and through observation of natural phenomena.

Introduction to Biotechnology
and Genetics

WINTER. Prerequisite: Bio Molecular or Biology Macro or the equivalent.

Grade Level: 10, 11 or 12

This course will utilize a hands-on laboratory based approach to explore the basics of DNA, human genetics and biotechnology.

Knowingly and unknowingly, the products of biotechnology surround us today. Understanding this relatively new and often misunderstood science will help students to make better choices, whether as a purchaser of food, a voter, or as a consumer.

Labs will include a DNA extraction, gel electrophoresis including an exploration of DNA in forensics, pcr, bacterial transformation, and more.

More advanced projects may include fish barcoding, an analysis of genetically modified organism (GMO) products in food, or an analysis of human ancestry through DNA testing. Fish DNA Barcoding allows students to identify the species of a fish sample based on its DNA sequence of a gene. With this kit, students will be able to test a piece of seafood from the dining hall or local market and verify if it is indeed the advertised fish species. A GMO (genetically modified organisms) activity allows students to gather sample food items from the grocery store or local fields, extract DNA from the samples, and identify the presence or absence of GMO sequences.

Physics

Prerequisite: Algebra II, Algebra II ac, Precalculus, or Precalculus ac.

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Students in Algebra II H, Precalculus H, or AP level Math may not take this course.

Grade level: 11 or 12.

Ninth and tenth graders are discouraged from taking this course.

A full-year course designed to introduce students to the concepts of physics without using the high level of mathematical complexity that is involved in most introductory physics courses, such as AS: Physics. All of the traditional introductory topics are covered: mechanics, motion, gravitation, relativity, sound light, electricity and magnetism. The course prepares students to take a mathematically complex physics course in the future. Labs and demonstrations are a prominent part of the course.

Robotics I

Prerequisite: Completion of Algebra II and completion of the physical science requirement.

Interest in math and success in at least Algebra II.

This course can be taken to earn credit in Mathematics.

This course combines skills in mathematics, physics, and computer programming in order to learn the basics of robotics.

An introduction to programming, simple machines, sensors, and movement are studied in order to build autonomous robots. Class time is spent working on building robots and projects will be given on a daily and weekly basis. A final project will be given in lieu of an exam.

Robotics II

Prerequisite: Robotics I

Interest in math and success in at least Algebra II.

This course can be taken to earn credit in Mathematics.

This course builds on the knowledge obtained in Robotics I. Topics covered will include complex machines, advanced programming algorithms, and complex movement and sensor capabilities. A focus will be placed on teamwork when completing tasks. Classtime is spent working on building robots and projects will be give on a weekly and bi-weekly basis. A final project will be given in lieu of an exam.

Robotics III

Prerequisite: Robotics II.

Interest in math and success in at least Algebra II.

This course can be taken to earn credit in Mathematics.

This course builds on the knowledge obtained in Robotics I and Robotics II. This course will spend its time focused on complex robotics projects which groups will tackle for the duration of the term. Teamwork and time management are critical elements to completing the tasks. The course combines elements of mathematics, programming, and physics in engineering design problems which students must build robots to solve. Class

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time is spent working on building robots and projects will be given for the term. Grades will be calculated on the basis of meeting certain milestones throughout the term.

Stream and Estuarine Ecology

FALL. Prerequisite: Bio Molecular or Biology Macro or the equivalent.

Humans have long been fascinated with the oceans and bays leading to them. Eighty percent of the human population lives within 60 miles of an estuary or coastline; water, whether for drinking, irrigation, fishing, or recreation is an important commodity. Using the Conococheague Creek and the Chesapeake Bay as models, this class will study how we investigate, monitor, and protect these systems, which are central to human survival.

Freshwater streams, estuaries and coastal zones are among the most productive and diverse ecosystems of the world. With their great variety of environments, these systems provide fascinating sites for study and research. Forming the interface between land and ocean, the coastal zone with its streams and estuaries is characterized by steep gradients, abundant life, extreme environments, and by significant human impact. The human impact is related to the high socio-economical value of these environments that provide the most prolific fishing grounds, important mineral resources, and are the zones for intense shipping traffic and other commercial activities.

This interdisciplinary course addresses the ecology of streams and estuaries. We will investigate the general ecological principles that govern their productivity and diversity, including their hydrodynamics, sedimentology, chemistry and plant and animal community structure. The processes in these zones affect coastal and oceanic water quality, shelf productivity and the global climate.