



# MILTON ACADEMY

C O U R S E C A T A L O G U E 2 0 1 7 - 2 0 1 8

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The courses, requirements and information included in this catalogue were accurate at the time of publication. Any changes voted by the faculty will be updated in June 2017. The most up-to-date version of this catalogue can be found on the Milton Academy Web site at [www.milton.edu](http://www.milton.edu).

## Dear Student,

This catalogue holds within its pages myriad opportunities for you as a scholar. The courses described enrich the Milton Academy curriculum, and I encourage you to take your time as you read about and consider the offerings you'll find here.

The various disciplines will allow you to cultivate a passion, explore a new interest, and examine different perspectives. Course selection is an opportunity for you to build a program that complements your interests in the classroom, your activities on Milton's campus, and the ambitions you have for the future.

Here are a few strategies that may guide you as you make your choices.

- Outline the courses that you may want to take over your entire Milton career, keeping in mind graduation requirements. Some courses have prerequisites; many do not need to be taken in a particular year.
- Second choices can be important, as some courses may fill up and others may not run if enrollment is insufficient.
- Advisors, classroom teachers, students, and the registrar can be helpful to you as you make your decisions. Ask questions, and take advantage of their wisdom and guidance.

Milton students are truly creative and critical thinkers, and engaged and independent learners. I encourage you to use this catalogue as a valuable tool, as it gives you the freedom to develop your own rigorous academic curriculum, which is at the core of the Milton experience. Expand your knowledge, challenge your perceptions of the world, and commit yourself to a learning experience that will inspire and transform you.



Jackie Bonenfant  
Academic Dean

## Course Levels and Expectations

Milton has several designations for accelerated work: Advanced, Honors, Accelerated and Advanced Placement (AP). Milton is not an AP-driven school and does not offer AP courses in English, math or the sciences. However, the intensity of the program does qualify students to take a number of AP exams.

Homework assignments require an average of 45 to 60 minutes of preparation for each class meeting for students in Classes I–III and 35 to 45 minutes for students in Class IV. Assignments in Advanced, Honors, Accelerated and AP courses may be more demanding than assignments in other courses. Milton Academy assumes that students who enroll in these courses will be able to complete these assignments within the normal homework time.

## Diploma Course Load Requirements

Entering Class IV	18 credits
Entering Class III	13 credits
Entering Class II	9 credits

The typical course load for an Upper School student is five credits. Milton offers three types of courses: a full course, meeting four or five periods per week all year and earning one credit; a half course, meeting two or three times per week all year and earning one half credit; and a semester course, meeting four times per week for one semester and earning one half credit. Students can earn the correct number of credits by taking a combination of full, half and semester courses. A student must carry at least four credits at all times and may never carry more than five and one half credits.

**Although we hope to offer all the courses described in this catalogue, courses that do not directly fulfill a diploma requirement will be offered only if enrollment is sufficient.**

Students must earn a passing grade in a course in order to receive diploma credit. To be promoted in any one year, a student must earn a minimum of four credits with grades of C– or better in at least three of those credits and a passing grade in English.

## Departmental Diploma Requirements

Milton encourages the development of individualized programs of study and the in-depth exploration of subjects of interest. The School's departmental diploma requirements facilitate these objectives, and students typically go beyond the diploma requirements in many academic disciplines. Below are the general requirements for each department. Successful completion of the courses listed below will meet these minimum requirements. Please refer to individual departments for more specific guidelines.

### English

One full course each year

### Mathematics

Geometry  
Algebra 2

### Languages

Level 3 (see note in Classics and Modern Language sections)

### Science

Chemistry or Physics  
Biology

### History

Ancient Civilizations or  
Modern World History  
and U.S. History  
or  
Two-year sequence of  
U.S. in the Modern World

### Arts Program

One full-year course after Class IV  
(see note in Arts Program section)  
or  
Music Package

### Physical Education

Class IV: Three seasons including  
Project Adventure  
Class III: Three seasons including  
Fitness Concepts  
Class II: Two seasons including CPR  
Class I: Two seasons (CPR if not taken in  
Class II)

### Current Events/Public Speaking

One ten-week course in Class III (or Class II)

### Required Non-credit Courses

Class IV: Introduction courses in  
music, performing arts  
and visual arts  
Classes IV–I: Affective Education (Health,  
Values, Social Awareness,  
Senior Transitions)

## Courses Requiring Departmental Permission

Enrollment in Advanced, Honors, Accelerated and AP levels in the following departments will be at the discretion of each department. Please refer any questions to the department head.

Classics	Ms. Wehle
Mathematics	Ms. Sugrue
Modern Languages	Mr. Hamel
Science	Ms. Seplaki

To enroll in any of the courses listed below, you must first obtain departmental permission from the following faculty member.

### Arts Program

Music Package	Mr. Dregalla
Jazz Improvisation	Mr. Sinicrope

### Arts

Adv. Visual Arts	Mr. Torney
Adv. Creative Writing	Mr. Connolly or Ms. Baker
Adv. Jazz Improvisation	Mr. Sinicrope
Adv. Drama (all)	Mr. Parisi
Adv. Dance (all)	Ms. Edwards

### Computer

Adv. Computer Programming	Mr. Hales
Programming Applications	Mr. Hales

### Music

Chamber Singers	Mr. Whalen
Chamber Orchestra	Mr. Dregalla

## The Mountain School

The Mountain School of Milton Academy, a semester program open to Class II students, offers rigorous courses that allow students to fulfill Milton Academy's diploma requirements while living and learning on a working farm in Vermont. Students pursue a challenging academic program (all Honors or AP courses), run the farm, explore their natural surroundings, and live in houses with teachers and friends. Courses provide an integrated learning experience that takes advantage of the school's small size and mountain campus.

While at the Mountain School, students take five academic courses, plus the Outdoor Program P.E. class. English and Environmental Science are required courses; students choose three other courses based on continuity with their program at Milton. Each class meets for 50 minutes, four times a week, throughout the semester. Classes range in size from two to 16 students.

A full description of the Mountain School's curriculum is available at [mountainschool.org](http://mountainschool.org) or from the associate dean of students. Applications are due in February of the Class III year for the following fall or spring semester.

## Arts Program

Arts Program courses foster creative thinking and introduce students to new ways of perceiving and interpreting ideas. All are full-credit, graded courses meeting five periods a week (including one or two double periods), and students should expect to do some preparation outside of class. All students entering Milton before their Class II year must take one Arts Program course during their Class I, II or III year. Students are welcome to take additional Arts Program courses after they have fulfilled the diploma requirement, and many advanced arts courses require a particular Arts Program course as a prerequisite. Arts Program courses do not presuppose any special talents but do require energetic participation and effort. Any one of the courses listed below satisfies the Arts Program diploma requirement. A full description of each course is on the page indicated.

NOTE: Students entering in Class II are not required to complete an Arts Program course except as a prerequisite to higher-level courses.

### Courses fulfilling Arts Program requirement:

Sculpture|Ceramics + Design (See page 6)  
Drawing|Painting + Design (See page 6)  
Photography|Digital Imaging + Design (See page 6)  
Technology|Media + Design (See page 6)  
Filmmaking + Design (See page 6)  
Oral Interpretation of Literature (See page 5)  
Drama (See page 5)  
Dance (See page 4)  
Design for the Theatre (See page 5)  
Creative Writing (See page 14)  
Jazz Improvisation (See page 4)  
Music Package (See page 4)

NOTE: The courses listed above are open to Classes I–III only.

## Music

### MUTHH

#### Music Theory

(Half Course)

Classes I, II & III

Starting with the fundamentals of music, this course explores a wide variety of music theory topics theoretical problems. Music is examined through harmonic and melodic analysis. Besides the written analysis, music is examined from an aural standpoint through ear training and sight-singing. No past musical experience is necessary, although it is helpful.

### MUHS

#### History of Music

(Half Course)

Classes I, II & III

Music History combines the study of music with an active development of listening skills. Students will study major works from the European canon while learning what it means to listen vigorously to music. Musical styles will be examined alongside an investigation of musical processes.

### MUCSH

#### Chamber Singers

(Half Course)

Classes I, II & III

This is a performing organization that emphasizes tone and detail of phrasing. Students study and perform great choral literature from every period, especially literature that is written for smaller choral groups. Individuals improve their sight-reading skills, their vocal technique and their knowledge of musical styles. Membership in Glee Club and an audition are required.

### MUORH

#### Orchestra

(Half Course)

### MUCOH

#### Chamber Orchestra

(Half Course)

Classes I, II & III

The orchestra is open to any woodwind, brass, string or percussion player. Besides standard, full orchestral literature, students will experience music of other ensemble types (e.g., wind band, string orchestra). Chamber Orchestra is open by audition only. Chamber Orchestra students rehearse one additional period per week.

## Music Package

*Satisfies Arts Program Requirement  
Classes I, II & III*

In place of a single Arts Program course, students with special talent and interest in music may satisfy the arts requirement through a combination of musical activities, generally over a period of two or three years. The package, designed by and for each student, includes one of the courses offered by the department (full or half, depending on the other components) and performance experience through choral singing and/or chamber music and orchestral playing. Music lessons may be part of the package but, by themselves, do not fulfill the performance component. A class in music theory or music history, completed either at Milton Academy or outside of the School, is required in this package. Students should plan to participate in a performing ensemble each year they are at Milton. Application for permission should specify the components of the package and requires the approval of both the music department chair and the academic dean. Applications must be completed by March of the Class II year.

**APIMJ**

## Jazz Improvisation

*Satisfies Arts Program Requirement  
Classes I, II & III*

This course gives students experience in ensemble playing and improvisation in the jazz and jazz/rock idioms. Students learn and play tunes in a group and explore the tunes for structure and harmony. This course emphasizes listening to recordings integral to the course work. Elementary knowledge of scales is required. The focus is on the development of improvisational and ensemble skills through playing. *(Permission of the instructor is required.)*

**ADVJI**

## Advanced Jazz Improvisation

*Classes I, II & III*

In this continuation of the introductory course, greater emphasis is placed on performing, and the music is more challenging. Students explore complex chord scales, rhythms and structures. The course usually focuses on one artist or one style of jazz music per semester. Additional years in this course allow the advanced jazz student to continue studying and performing under the guidance of our jazz faculty. *(Prerequisite: Permission of the instructor.)*

**ADVJIH**

## Advanced Jazz Improvisation

*(Half Course)*

*Classes I & II*

In this continuation of the introductory course, greater emphasis is placed on performing, and the music is more challenging. Students explore complex chord scales, rhythms and structures. Additional years in this course allow the advanced jazz student to continue studying and performing under the guidance of our jazz faculty. *(Prerequisite: Permission of the instructor.)*

**APDAN**

## Dance

*Satisfies Arts Program Requirement  
Classes I, II & III*

This comprehensive course is designed both for students who have had little or no previous formal dance experience and for the intermediate level dancer. Students explore and practice the principles of dance technique, improvisation and composition, working to develop greater awareness, freedom and control in the use of the body as an instrument of expression. Ballet, modern and jazz dance styles will be introduced and practiced.

**DANMH**

## Advanced Dance: Modern

*(Half Course)*

This course is designed for students prepared to work at the advanced or intermediate level in modern dance technique. Students practice advanced warm-up exercises, center combinations and movement patterns. In addition to technique, students explore improvisation and dance composition in a more in-depth manner. *(Prerequisite: Arts Program Dance or permission of the instructor.)*

**DANBH**

## Advanced Dance: Ballet

*(Half Course)*

This course is designed for dancers prepared to work at the advanced or intermediate level in ballet technique. Students practice advanced warm-up exercises, center combinations and movement patterns. In addition to technique, students may learn repertory from choreographed ballets. *(Prerequisite: Arts Program Dance or permission of the instructor.)*

**DANCYH**

## Advanced Dance: Choreography

*(Half Course)*

This course explores the path from improvisational dancing to sophisticated dance making. In a fun and supportive atmosphere, students cultivate their natural movement resources, developing movement ideas into fully shaped dance and movement pieces. Students also study relevant and well-established choreographers. No formal dance training is required; however, the ability and the desire to move are necessary. This

course is strongly recommended for students interested in choreographing for the Winter Dance Concert. (*Prerequisite: Permission of the instructor.*)

#### APDRM

### Drama

*Satisfies Arts Program Requirement*

*Classes I, II & III*

This course teaches basic skills for the beginning actor. Exercises and scene work aim at developing concentration, freedom and power of expression, connection with a text and with acting partners, and a process for approaching characterization. The emphasis is on representational acting techniques and contemporary, realistic texts. Attendance at all Upper School performances is required. Excursions to professional productions may be required.

#### DRSTF

### Advanced Drama: Acting Styles

*(Semester 1)*

*Classes I & II*

Emphasis in this course is on presentational acting techniques, scene analysis, and directing principles. Students engage in intensive scene work from the classical repertory that will include Shakespeare and may include Molière, Wilde, Chekov, Ibsen, the Greeks, or other classical Western and non-Western playwrights. (*Prerequisite: Arts Program Drama or permission of the department chair.*)

#### DRAMS

### Advanced Drama: Musical Theatre

*(Semester 2)*

*Classes I & II*

This course focuses on developing skills in acting, singing and dancing for musical theatre. The course is team-taught by members of the performing arts and music departments and combines exercises and scene work from contemporary Broadway musical theatre. The course culminates in a public performance by members of the class. (*Prerequisite: Arts Program Drama or permission of the department chair.*)

#### DRAIH

### Advanced Drama: Improvisation

*(Half Course)*

*Classes I & II*

This course covers the many aspects of improvisation such as quick and thorough thinking on one's feet; creating believable characters; the use of subtext, concentration, imagination and observation in short

and long-form non-scripted scenes; working cooperatively with an ensemble and audience; creating truthful relationships; and the use of the body and voice as communicative instruments. Through participating in class activities, attending two off-campus shows, and performing in public, students will become more spontaneous, trusting and cooperative performers. (*Prerequisite: Permission of the instructor.*)

#### APOI

### Oral Interpretation of Literature

*Satisfies Arts Program Requirement*

*Classes I, II & III*

Oral Interpretation introduces students to a dynamic discipline which includes storytelling and comedic performance, as well as spoken word and slam poetry. In a supportive environment with minimal memorization, students develop skills that highlight performance as an important tool in understanding one another and ourselves. It is an ideal course for those eager to achieve greater confidence in oral presentation, regardless of content. The emphasis, above all, is on finding fun and meaningful ways to make literature come to life.

#### DSWH

### Spoken Word Poetry

*(Half Course)*

*Classes I, II & III*

Students will immerse themselves in the world of spoken word poetry by reading, listening to, and watching the work of accomplished poets, as well as by engaging in the daily practice of writing and performing their own original poems. Through a variety of approaches, students will craft their words and use their voices and bodies to create meaningful group and individual live performances. They will perform their work, as well as the work of others, in the forms of spoken word, slam and hip hop.

#### APDT

### Design for the Theatre

*Satisfies Arts Program Requirement*

*Classes I, II & III*

This is an introductory course in scenic and lighting design. Through individual and group projects, students will learn basic drafting techniques, watercolor rendering and scale model construction. In addition, students will complete hands-on projects in stagecraft and design, including faux surfacing, event lighting, plaster molding, mask making, fake food creation and more.

#### DRCDH

### Advanced Drama: Costume Design

*(Half Course)*

*Classes I & II*

This course explores costume design and construction through theoretical and practical projects. Students will learn basic sketching, hand and machine sewing techniques, pattern reading and adaptation, millinery techniques, and costume jewelry making. In addition, through play reading and analysis, as well as historical research, students will develop and present costume plots, individual character costume sketches, and design concepts.

#### EHAMH

### Hamlet

*(Half Course)*

*Classes I & II*

This course is team-taught by a member of the English department and a member of the performing arts department. Please see the full course description in the English section on page 13.

#### IDPSH

### Project Story: Narrative Journalism and Performance

*(Half Course)*

*Classes I & II*

From competitive story slams performed for packed venues to storytelling courses designed to empower workplace professionals, sharing narrative with live audiences has never felt more current or relevant. In this course, students will study the art of storytelling through moving their own and others' stories from page to stage. During the first semester, students will learn narrative journalism skills, performance skills, and peer workshop practice, to collect and shape stories of our School. They will work collaboratively during the second semester to identify, research, write and perform a story that originates beyond Milton Academy. Throughout the year, students will read and view storytelling models, attend performances, and hear from visiting artists and activists who promote storytelling around the country, believing that shared stories strengthen and sustain human connection. (*This course is listed under both the English and performing arts departments.*)

# Visual Arts

The following courses satisfy the Arts Program graduation requirement. Each course is an intensive foundation course designed to give students a thorough introduction to basic techniques, principles of design thinking and visual communication, and the artistic expression of ideas. After completing a foundation level course, students are encouraged to pursue areas in greater depth in the program's elective courses.

## Notes:

- These courses require no previous experience. Students with little experience will be supported in their learning in a step-by-step process. Students who have had some experience with the material will be challenged by more advanced options within each project area as the course progresses.
- Students with definite interest in visual art are strongly encouraged to take their first course in Class III so that they may take an advanced course in Classes I or II in time to complete a college portfolio. Each of these Arts Program courses will give students opportunities to produce some of the work necessary to begin a college portfolio should they choose to do so.
- In lieu of textbook charges, and to cover the cost of supplies, a visual arts fee will apply each semester, with amounts varying per course.

## APDP

### Drawing|Painting + Design

*Satisfies Arts Program Requirement  
Classes I, II & III*

In this intensive, year-long foundations course, students will be introduced to the foundations of drawing and painting in the fall semester. In the spring semester, they will apply those techniques with design thinking in dimension and relief, printmaking, digital imaging and composition, and new media. This course, for students who like making and creating, allows beginners to succeed and experienced students to be challenged. All assignments are hands-on and studio-based, with basic exercises culminating in major projects. Students will learn visual language, apply techniques, and solve problems by means of a creative process, all supplemented by a broad introduction to art history, aesthetics and criticism, and the most contemporary modes of art-making. Each student will be urged to explore ideas, experiment with an open mind, and make

expressions personal, dramatic and original. The course will include field trips to art museums and contact with professional artists.

## APPDI

### Photography|Digital Imaging + Design

*Satisfies Arts Program Requirement  
Classes I, II & III*

This course introduces students to the art of seeing and picture-making from its analog origins to today's digital contemporary practices. In the first semester, students will work with a 35 mm film camera, concepts of exposure, and techniques of developing film and wet printing. Students will develop their eye and composition skills through hands-on projects that also provide exposure to the great canon of photographic masters; deepen their own expressive ability; and gain an understanding of how photography was developed from the late 19th century through the first half of the 20th century. In the second semester, students will shift into the digital realm, working with DSLRs and becoming fluent with industry standard programs such as Adobe Bridge, Photoshop and CameraRaw, all through application tutorials and project-based learning. All projects will introduce contemporary photographers and address the growth of this medium, with the advent of color and digital technology. Students will feel confident in their understanding of the medium both technically and artistically, and with their ability to access the visual language to express their ideas.

## APSC

### Sculpture|Ceramics + 3-D Design

*Satisfies Arts Program Requirement  
Classes I, II & III*

This course centers on the three-dimensional design and construction of functional and artistic objects. Students solve a series of design problems in a hands-on way; acquire skill in the use of hand and power tools; and learn design principles that inform both industrial and fine arts. Projects may include the making of clocks, rustic furniture, toys, kinetic sculptures, architectural models, inventions and material-inspired expressions. Students will consider the difference between unity and variety, explore the relationship of art to utility, and learn basic concepts of form, space, rhythm, balance and function. Does form always follow function? What works? What is good design? What is beautiful? Why?

## APTMD

### Technology|Media + Design

*Satisfies Arts Program Requirement  
Classes I, II & III*

This course introduces the basic principles and practices of design using contemporary, new and rising technologies. The course is project-based, emphasizing hands-on instruction, experimentation and exploration in new media, including digital imaging and graphic design, animation, industrial design with 3-D modeling and printing, and environmental/installation art. Particular emphasis will be placed on imaginative innovation and critical thinking, and the exploration of both existing and new interpretations of design in contemporary art. Students will be expected to reach beyond current definitions and boundaries of traditional art forms and applications in a collaborative spirit of discovery.

## APFD

### Filmmaking + Design

*Satisfies Arts Program Requirement  
Classes I, II & III*

This course introduces students to the basic principles and practices of digital movie making, visual storytelling, and cinematography. The course is project-based, emphasizing hands-on instruction and exploration in the creation of short films. Students learn the basics of pre-production, effective camera technique, the editing process, and production management.

## Semester, Half-course and Full-course Electives

*Classes I & II*

The department offers advanced level courses in art and design for students who wish to study specific areas in depth. Students will develop higher-level skills, interpret more sophisticated ideas, and create work on a more ambitious scale. Although these courses are structured with themes and assignments, students will work in an increasingly independent way.

The department recommends (but does not require) that a student who elects a first semester course take a second semester course as well. The department strongly recommends semester over half courses, but will consider requests from students who can only pursue a course for half credit. Requests for any of these half courses must be made in the spring because later adjustments in the schedule may not be possible.

The prerequisite for semester and half course electives is a full-year arts program course or the equivalent. The visual arts department recommends that students take Drawing|Painting + Design, Sculpture|Ceramics + 3-D Design, Photography|Digital Imaging + Design, Technology|Media + Design or Filmmaking + Design before taking an elective. Preference may be given to students who have taken these courses. Permission to take an advanced course may be denied if a student's preparation or experience is insufficient. Such permission must be obtained from the department chair before registering for these courses.

#### ARDF

### Advanced Drawing

(Semester 1)

In this course, students will explore major genres of drawing in both black and white and in color. After an intensive review of line, volume, space and light, students will focus on how to see and draw in "relational" terms. Both collaborative and individual projects will guide students in drawing the human face and figure, the landscape, architecture, abstraction or the use of alternative materials (including sculptural drawing and printmaking). The class will take drawing excursions around campus and to other nearby areas, including Boston museums. The culmination of the course is a large-scale drawing project blending realistic observational drawing with drawing from imagination, fantasy and abstraction. *(Prerequisite: Permission of the department.)*

#### ARPHDF

### Advanced Photography: Digital Imaging

(Semester 1)

This course builds upon foundational skills to explore photography in the digital age. In a hands-on, project-based curriculum, students work exclusively with DSLRs and push their understanding of the medium and their own personal creativity. Projects will introduce some of today's most revolutionary photographers, and will ask students to reimagine how photography can be manipulated as a mode for personal and artistic expression. Students will increase their fluency in programs such as Adobe Bridge, Photoshop and CameraRaw, learning advanced editing techniques through supplemental tutorials and projects. Throughout the semester, students will explore studio lighting, experiment with scanners, and

learn advanced printing skills using medium and large format printers. A portfolio of finished and mounted prints will be expected, including large format display prints. Support for the creation of portfolios for college admission will be integral to early work. *(Prerequisite: Permission of the department.)*

#### ARSF

### Advanced Sculpture

(Semester 1)

In this course, students will explore a range of ideas and possibilities through hands-on work. The course will begin with concepts around installation and site-specific works. Students learn to hand-build with clay, to design and construct large wooden forms, to carve soapstone, to weld with metal, or to cast forms with plaster. By investigating properties of shape, form and surface, and by using a variety of hand and power tools, students acquire technical skills and self-confidence in self-expression. Project themes may range from the abstract to the symbolic. Past projects have included surrealist transformations of found objects like computers or windows, interpretive self-portraits in Joseph Cornell-style boxes, and the welding of life-sized figures. *(Prerequisite: Permission of the department.)*

#### ARTMF

### Advanced Technology and Media

(Semester 1)

Building upon the technology foundations course that surveys many design genres, this class delves into a semester-long study of graphic design. Otherwise known as communication design, this art form focuses on how to effectively express ideas through visual art and textual content. Student will study art and images, typography, and layout for both the physical and virtual world (print versus digital content). Projects will emphasize originality and hands-on experimentation of advanced applications in technology. Two dimensional work will be primarily composed in Adobe Illustrator, InDesign and Photoshop but may also include animation with Flash and 3-D modeling and printing. *(Prerequisite: Permission of the department.)*

#### ARPS

### Advanced Painting

(Semester 2)

In this course, students will explore painting technique across a variety of media, primarily using water-soluble oils, but also acrylic or watercolor. Students will be challenged to "think in color" and to "see the light" in

relation to form and space; they will paint both from "life" and from their imaginations. Subjects may range from abstract works, still life, the human face and figure, and the landscape, to stories and fantasies of surrealistic and invented worlds. Each student will work to develop his or her own personal vision through an experience of different styles and techniques. Field trips may be part of this course, intended to expose students to the contemporary art scene. *(Prerequisite: Permission of the department.)*

#### ARPMs

### Advanced Printmaking

(Semester 2)

In this course, students will explore the basics of four major forms of printmaking: monoprint, intaglio, woodcut and silkscreen. The course begins with understanding image making, using a matrix or indirect source, and then investigating drawing, line, shape and tone through black and white imagery. Students will learn to create small editions of prints, multiple-color images, and large poster-size prints. Both traditional and contemporary techniques will be emphasized, using hand printing methods as well as incorporating digital media. The course will also speak to the historical development of printmaking and its role and influence on today's society. Field trips and guest speakers may be a part of the course, to introduce students to movements in contemporary printmaking, from journalism to poster art. *(Prerequisite: permission of the department.)*

#### ARPAS

### Advanced Photography: Alternative Processes

(Semester 2)

This course builds upon foundational techniques in digital and analog photography, working both in the digital/technical design realm and returning to the darkroom to explore alternative processes in photography. In a hands-on, project-based curriculum, students experiment with new kinds of cameras such as medium format Holgas, fish-eyes, panoramas and pin-holes. Students will refine their darkroom skills; explore different printing techniques, such as multiple exposures and solarizations, mono-printing and cyanotypes; and learn how to produce refined final prints on fiber paper. Students will study photographic masters from the past and present who have challenged the traditional uses of the medium, pushing both the technical and expressive boundaries

of creativity. A portfolio of finished and mounted prints will be expected, including large format display prints. Support for the creation of portfolios for college admission will be integral to early work. *(Prerequisite: Permission of the department.)*

#### ARCS

### Advanced Ceramics

*(Semester 2)*

This course covers the foundational techniques of working with clay: sculptural hand-building, slab and coil construction, wheel-throwing and glazing. The course emphasizes individual expression in clay, whether artistic or functional. Projects range from traditional teapots and bowls, to surrealist transformations of objects, to large abstract sculptural expressions. Past projects have included totems of male and female figures, and ceremonial objects and heads. *(Prerequisite: Permission of the department.)*

#### ART3DS

### Advanced Technology and 3-D Design

*(Semester 2)*

This course builds off foundational skills in technology to explore in greater depth the broad fields of design in today's world. Coursework will be project-based with an emphasis on experimentation, expression and collaboration. Students will gain an increasing command of visual 3-D design through virtual and physical projects including 3D-modeling and printing, sculpture, industrial design or installation/environmental work. Students will delve into advanced applications of latest technology and utilize techniques creatively. *(Prerequisite: Permission of the department.)*

#### ARFH

### Advanced Filmmaking

*(Half Course)*

Building on the foundation of knowledge, skills and techniques learned in the Filmmaking + Design course, this course seeks to strengthen students' mastery of story writing, production management, directing, camera use, and editing. Students will study and create short films using digital video. *(Prerequisite: Permission of the department.)*

#### ARDFH

### Advanced Documentary Film

*(Half Course)*

This course is an exploration of the research techniques, methods and skills associated with creating documentaries. In the course students will produce a documentary from exploration, to implementation, to execution and presentation. With room for creativity and invention, students will explore the "raw material of reality" and endeavor to construct an account that is visually engaging and conceptually appealing to a broad audience. After selecting topics and finding mentors in their area of interest, students will shoot and edit their documentaries, then present their work publicly. *(Prerequisite: permission of the department.)*

#### AODPF

### Advanced Portfolio: Drawing|Painting

*(Semester 1)*

This is a seminar-based course for Class I students, designed to meet the individual needs of students with visual ideas they wish to explore in-depth in drawing, painting and/or printmaking, through an extended series of works around a particular theme or concept. Most students will use this class to complete work for their college portfolios. Interested students could also complete the requirements for the Advanced Placement Studio Art: Drawing portfolio with continued study in the spring semester through the Advanced Portfolio: Independent Studio Seminar class. Working together in a classroom format, students will benefit from dialogue with each other, critiques and field trips. *(Prerequisite: At least one, and preferably more than one, advanced semester elective, or permission of the department.)*

#### AOSCF

### Advanced Portfolio: Sculpture|Ceramics

*(Semester 1)*

This is a seminar-based course for Class I students, designed to meet the individual needs of students with visual ideas they wish to explore in-depth in sculpture and/or ceramics, through an extended series of works around a particular theme or concept. Most students will use this class to complete work for their college portfolios. Interested students could also complete the requirements for the Advanced Placement Studio Art: 3-D Design portfolio with continued study in the spring semester through the Advanced Portfolio: Independent Studio Seminar class. Working together in a classroom format,

students will benefit from dialogue with each other, critiques and field trips. *(Prerequisite: At least one, and preferably more than one, advanced semester elective, or permission of the department.)*

#### AOPDIF

### Advanced Portfolio: Photography|Digital Imaging

*(Semester 1)*

This is a seminar-based course for Class I students, designed to meet the individual needs of students with visual ideas they wish to explore in-depth in photography and/or digital imaging, through an extended series of works around a particular theme or concept. Most students will use this class to complete work for their college portfolios. Interested students could also complete the requirements for the Advanced Placement Studio Art: 2-D Design portfolio with continued study in the spring semester through the Advanced Portfolio: Independent Studio Seminar class. Working together in a classroom format, students will benefit from dialogue with each other, critiques and field trips. *(Prerequisite: At least one, and preferably more than one, advanced semester elective, or permission of the department.)*

#### AOFF

### Advanced Portfolio: Filmmaking

*(Semester 1)*

This is a seminar-based course for Class I students, designed to meet the individual needs of students with visual ideas they wish to explore in-depth in film, through an extended series of works around a particular theme or concept. Most students will use this class to complete work for their college portfolios. Interested students could also complete the requirements for the Advanced Placement Studio Art: 2-D Design portfolio with continued study in the spring semester through the Advanced Portfolio: Independent Studio Seminar class. Working together in a classroom format, students will benefit from dialogue with each other, critiques and field trips. *(Prerequisite: At least one, and preferably more than one, advanced semester elective, or permission of the department.)*

#### AOISS

### Advanced Portfolio: Independent Studio Seminar

*(Semester 2)*

This seminar is a capstone course offering Class I students the opportunity to explore subjects beyond the traditional studio art

## Classics

curriculum, either as a series of independent works or as class projects. Assignments will span contemporary art modes and will include a variety of media and ideas. Genres may include digital imaging, traditional or alternative processes of photography/digital-imaging, film/moving-image, printmaking, installation art, ceramics, sculpture, painting or drawing. Students may also explore cross-disciplinary connections, particularly regarding the use of technology in creating art, or with the sciences or humanities. Interested students could also complete the requirements for the Advanced Placement Studio Art portfolio in Drawing, 2-D or 3-D Design. Projects may be inspired by work with professional artists, including Nesto Gallery exhibitors. The course culminates in a major independent project that may precede or extend into a senior project.

*(Prerequisite: A full-year Arts Program course in Visual Art, at least one, and preferably more than one, advanced semester elective, an Advanced Portfolio elective, and permission of the department.)*

AHART

### History of Art

*(Full Course)*

In this course, students will study the cultural history that emerges from art images created by ancient and modern cultures. These images address the heart and soul of those cultures. The tour ranges from pre-historic stone carved fertility goddesses to modern art installations, an international movement in which classical structural has been rejected. Our study tracks the ebb and flow of these developments. This class will help students build their visual acuity in order to get at the heart of the artist's intention through an analysis of the specific form and content of the work. We will look at the intersection of a culture's prevailing set of ideas and how the art of the time supported or attacked those values. For example, as the European Industrial Revolution was well underway, painters like Manet and Degas refuted painting forms that had been the standard since the Renaissance. Secondary documents, reflections and analysis by art historians will be used to add texture and depth to the students' understanding of the art. Interpretation, analysis and essay writing are emphasized. This course includes field trips.

The benefits of training in the classics are many. The study of Latin and Greek literature in the original affords students the means to appreciate more fully the foundation and development of English and European literature. Similarly, the study of the Latin language is an excellent basis for understanding English and the modern romance languages. Equally important, the intellectual discipline of classical studies is an aim and reward in its own right. The study of Latin and Greek teaches precision and flexibility of mind while fostering the development of regular and thorough study habits. After mastering the basics of grammar, vocabulary and syntax, students learn to translate and interpret important works of literature. Because students develop the skills of close textual analysis with works that have been hotly debated for centuries, they begin to understand both the scholarly value of their own interpretations and how the lenses of different eras affect the way a work is viewed. Completion of level 3 or 2/3 in Latin satisfies the language diploma requirement. The advanced Latin course, Latin Literature (AP), prepares students for the Advanced Placement Latin examination. Advanced courses in Latin authors are equivalent to intermediate level college courses.

*Note: A student who enters in Class II and does not qualify to enter at least Level 2 in a language offered at Milton will be placed in a foreign language at the level that is most appropriate for the student's growth and development and will be expected to take two years of that language (ancient or modern).*

LAT1

### Latin 1

This introduction to the Latin language presents the basics of grammar and vocabulary, as well as background in Roman history, culture and mythology. Because students start Latin with different backgrounds in English grammar, we devote considerable time to examining the way English works. In addition, students learn to look for English cognates of the Latin words they study, thus strengthening their vocabulary in both languages. Students are introduced to all five declensions; the six indicative tenses and the infinitives (active and passive) of all conjugations; relative, personal, demonstrative and reflexive pronouns; and the indirect statement comparative system of adjectives and adverbs. Successful completion of this course

qualifies students for Latin 2. Highly motivated and proficient students may request permission to enroll in the accelerated course, Latin 2/3.

LAT2

### Latin 2

Following a systematic review of Latin morphology and sentence structure, students in Latin 2 complete their study of forms and syntax while developing reading skills using adapted selections, primarily from Cicero. Starting in the spring, the course provides students with their first opportunity to read, in the native language, words written two millennia ago by authors who have influenced the development of Western literature and history. Some original Latin texts may serve as a starting point for exploring Greco-Roman mythology, culture and important periods of Latin history. This course prepares students to read Latin prose.

## Intensive Language Courses

These are accelerated courses designed for Class I students (and students in Class II with special permission). Each is the equivalent in difficulty and pace to a first-year college language course and is open only to students who have completed the language requirement through study of another language. *(Offered subject to sufficient demand.)*

CHINT

### Intensive Chinese

FRINT

### Intensive French

GRINT

### Intensive Classical Greek

LAIN

### Intensive Latin

SPINT

### Intensive Spanish

**LAT3****Latin 3**

A reading course with some grammar and composition, Latin 3 focuses on developing the students' reading skills. Students build vocabulary by identifying learned roots, prefixes and English derivatives. Prose readings include selections from Caesar's commentaries and the works of Cicero, which we examine for rhetorical literary style as well as for content and political implications. Excerpts from Ovid's *Metamorphoses* and *Amores* introduce meter and familiarize students with mythological stories. Successful completion of this course qualifies students for Latin 4. Highly motivated and proficient students may request permission to enroll in the Advanced Placement course, Latin Literature.

**LA2/3****Latin 2/3 (Accelerated)**

This course combines all the grammar and authors studied in Latin 2 and 3. The class meets five times per week and assumes a solid foundation in level 1 Latin. Successful completion of this course qualifies students for Latin 4. Highly motivated and proficient students may request permission to enroll in the Advanced Placement course, Latin Literature. (*Enrollment by permission of the department.*)

**LAT4GA****Latin 4: Literature of the Golden Age**

Students in this course develop their reading skills as they translate and engage with selections from first century B.C.E. authors. Readings are drawn from Cicero's speeches and/or letters, Ovid's *Metamorphoses*, Vergil's *Aeneid* and other works of prose and poetry that are representative of the late Republican and Augustan age. These works introduce students to some of the most popular classical myths, to themes of love and the hero, and to the historical context that shaped the works. Students strengthen grammar skills, and increase reading speed and comprehension. They learn to scan dactylic hexameter and elegiac verse. This course introduces students to great works of Latin literature and prepares students for the Advanced Placement course, Latin Literature.

## Advanced Classics

Roman Elegy and Lyric, and Roman History are both half courses. Each meets twice per week throughout the year and may be taken independently or concurrently. Roman Philosophical Writings and Selected Readings are semester courses, meeting four times per week for half the year. Students must complete Latin Literature (AP) before enrolling in other advanced Latin courses with the exception of Advanced Classics: Ancient Greek 1, for which a level 4 language is co-requisite. Note: When there is a need, and staffing permits, Roman Philosophical Writings or Selected Readings may be offered as a half course.

**LALAP****Latin Literature (AP)**

This reading course focuses on Vergil's *Aeneid* and the selections of Caesar's commentaries on the Gallic War that are included on the Advanced Placement examination. Students consider the major themes of the works within their literary and historical contexts. Designed for highly motivated students, this rigorous course presents elements of Roman history, politics, mythology and the classical literary tradition. Through close textual study, students encounter literary criticism as a tool for understanding classical literature. (*Permission of the department required; prepares students for the AP Latin examination.*)

**LAELH****Advanced Latin: Roman Elegy and Lyric (Half Course)**

This course focuses on reading and understanding Latin poetry in its literary and historical contexts. Reading works by poets such as Catullus, Horace, Sulpicia and Ovid, students trace the development of meter, diction and poetic motifs. The class also explores how Roman poets adapted the conventions of love poetry to present an image of the Roman state under Augustus that is more personal than Vergil's vision. Some important topics studied are first person narrative, gender and poetic allusion. (*Prerequisite: Latin Literature (AP) or permission of the department.*)

**LA5RH****Advanced Latin: Roman History (Half Course)**

How did the Romans view their history?  
How did they want to be remembered?  
This course provides a look at Roman

history through the eyes of some of Rome's better-known historians. A close reading of selected texts in Latin serves as a basis for examining questions of historiography and prose style. Principal selections are drawn from Livy, Tacitus and Sallust. (*Prerequisite: Latin Literature (AP) or permission of the department.*)

**LARPF****Advanced Latin: Roman Philosophical Writings**

(Semester 1)

What role did the Roman gods have in shaping the world around us? What does it mean to live "a good life"? In this course, students read selections from Lucretius, Cicero, Horace and Seneca and examine their works for philosophical insight and poetic craft in their historical context. Students are introduced to important Greek influences on Roman philosophy. (*Prerequisite: Latin Literature (AP) or permission of the department.*)

**LASRS****Advanced Latin: Selected Readings**

(Semester 2)

This course permits students to pursue their own interests in Latin and Greek literature at an advanced level. Working together with members of the department, students select authors and texts to read. Past classes have read comedy, satire, oratory and history. (*Prerequisite: Latin Literature (AP) and one other Advanced Latin course or permission of the department.*)

**ACG1****Advanced Classics: Ancient Greek 1**

This course covers basic grammar and readings. Adapted texts serve as a basis for discussions about Greek culture and history. The course leads to Greek 2 or Greek 2A. (*Prerequisite: current enrollment in or completion of level 4 of a language at Milton.*)

**ACG2****Advanced Classics: Ancient Greek 2**

Students complete the study of Greek grammar and then proceed to careful reading of selections from authors such as Xenophon, Plato and Lysias. This course leads to Greek 3.

# English

## ACG2AH

### Advanced Classics: Ancient Greek 2A (Half Course)

In this course students continue the study of Greek grammar and syntax while reviewing the foundation built in the previous year. Practice in making literal translations supports the learning of grammar and the development of reading skills. This course serves as the first half of Greek 2 and is continued in Greek 2B.

## ACG2BH

### Advanced Classics: Ancient Greek 2B (Half Course)

This course provides a continuation of Greek 2A, including a complete review of Greek grammar and readings from Xenophon or Lysias. The conclusion of Greek 2, this course offers grammar review and continued historical studies in the context of reading selections from unaltered Greek prose. This course leads to Greek 3.

## ACG3

### Advanced Classics: Ancient Greek 3

This course covers selected readings in classical Greek authors including Plato, Xenophon, Euripides, Homer and Herodotus.

After Class IV, in which all students take the same English course, students may choose from among several electives offered in each of the remaining three years. Students new to Milton make this choice shortly after they decide to matriculate, in consultation with the registrar's office. Returning students make a choice for the following year in consultation with their current English teacher.

Creative Writing, Advanced Creative Writing, *Hamlet* and Exposition do not fulfill the diploma requirement in English and must be taken in addition to a full English course.

## Class IV English

### EN4

The course emphasizes basic skills in reading the most important literary genres; in writing clear, coherent exposition; and in developing a powerful vocabulary. Texts include a Shakespeare play, portions of the Bible, and anthologies of short fiction and poetry. In addition to four class meetings per week, students attend a weekly writing workshop.

## Class III Electives

The department offers four courses: Perspectives, Founding Voices, Performing Literature and Seeing Literature.

Given the various interests and abilities of the students, each of these courses is of comparable difficulty with similar amounts of writing. All students in Class III read Sophocles's *Oedipus Rex*, Shakespeare's *Macbeth* and Fuller's *A Soldier's Play*.

The following descriptions illustrate the content of each course in more detail.

### ENPL

#### Perspectives: Genre and Culture

Examining texts grouped by genre—short story, novel, play, and poem—to create a basis for comparison, students will explore how different cultural contexts treat major literary themes such as coming of age, tragedy, love, and the individual versus society. At the forefront of essays and class discussions will be the question of how a broad spectrum of cultures, eras and traditions shape universal human stories. A typical unit, for example, may examine short stories about coming of age from three distinct countries, or love poetry from three different centuries. Texts

might include titles such as *The Nick Adams Stories*, *Drown*, *The Things They Carried*, and *The Dew Breaker*.

### ENFV

#### Founding Voices: Literature from the Ancient World through the Renaissance

This course will explore works that have shaped the world's literature and influenced writers and readers from early times to the present. Foundational texts and authors might include *Gilgamesh* (the oldest piece of literature in the world), Homer's *The Iliad*, *The Ramayana*, Ovid's *Metamorphoses*, Dante's *Inferno*, *The Arabian Nights*, and Tang Dynasty poetry. At the end of the year, students may read one or two modern works to show how the foundational techniques, ideas and themes play out in contemporary contexts.

### ENPF

#### Performing Literature

The readings in this course present a mixture of English and American writers, classical and modern works, and the major literary genres. While students continually write essays and learn grammar and aspects of style, what distinguishes this course from the other Class III electives is its emphasis on oral interpretation. Most sections begin with plays, and the students perform scenes and characters aloud, stage some scenes, and conduct dramatic analysis. As the course progresses, students give speeches, present panel discussions, write and perform in the voice of individual characters, create trials, or work in other performance activities as determined by the teacher.

### ENSL

#### Seeing Literature

From the imagery of a poem to the point of view of a short story or novel, literature often encodes in words important visual messages and commentary on human perspective. This course examines a diverse raft of literary works with special attention to the perspectival project within literature. With traditional books at the forefront, the course will also use paintings, films, and graphic novels to deepen understanding of the human complexities of seeing at the heart of each text, as well as to embrace the reading and writing goals of the Class III curriculum. Titles may include *The Handmaid's Tale*, *Maus*, and *Persepolis*.

## Class II Electives

ENAPP

### Approaches to Literature

This course guides students in approaching literature from a number of analytical perspectives. Beginning with close reading—the detailed examination of a variety of texts for what the language will yield—the course moves to grouping texts by genre, by common theme, by historical period, and by a single author. In the late spring, the class applies all of these approaches to a single work, studying the text closely while also considering its form and theme, the period from which it came, and the influence of events in the author’s life. Past units include Hemingway, civil rights, the Feminist Movement, drama, and poetry of the Renaissance.

ENHC

### Literature and the Human Condition

Pursuing a broad philosophical inquiry into what it means to be a person, to form relationships, to make decisions and to live with their consequences, students read works by major British and American writers and place these texts into conversation with influential pieces by writers from other literary traditions. The class functions primarily as a seminar in which students explore the sub-topics that emerge to shape our discussions: heroism and villainy; masculinity and femininity; self and other; rationality, the unconscious and chaos; mortality, embodiment and divinity; innocence, guilt and redemption. In their writing assignments, students clarify and argue their own ideas about the course’s central themes in critical essays, personal essays and creative responses. Texts include *Paradise Lost*, *Hamlet*, and *Heart of Darkness*.

ENAL

### American Literature

This course is a chronological survey of classic American literature with representative readings from the works of predominantly 19th- and 20th-century writers. The form and content of the readings offer great variety, and students’ written responses range from straightforward literary criticism to creative imitations of styles. While some direct instruction fills in pertinent biographical or historical background, most classes are seminar discussions, and teachers encourage student participation. The course presents an overview of American culture through

its literary figures. Students who also take United States History in the Class II year find that the two courses complement each other. Key texts include *The Scarlet Letter*, *Walden*, *The Adventures of Huckleberry Finn*, *The Great Gatsby*, and *Sula*.

ENMNW

### Man and the Natural World

This course explores varied human responses to the natural world through literature selected for its provocative response to nature and the ways in which man marks his presence on the land. The tension between urban and rural visions will help students understand ideas of the wilderness and of the city in the human imagination and the ways in which memory and imagination help define place in the world. The course is grounded in concrete, specific observations that grow toward more abstract, complex revelations about the human condition. Literature ranges from novels, poetry and essays to explorers’ journals and diaries. The course includes contemporary authors such as Leslie Marmon Silko and Annie Dillard but also explores the visions of writers such as Thoreau and Faulkner. Writing assignments will range from nature journals to essays of literary analysis and response papers.

ENEAJ

### Studies in English and American Literature

(Two-Year Sequence)

This course introduces students to major English and American writers and demonstrates the connections between English and American literary traditions. Structured chronologically, it begins with the major writers in England who form the basis for all subsequent developments. The second and third semesters of the sequence emphasize the similarities and dissimilarities of British and American writers and some ways in which they influenced each other and were influenced by their cultures. In scope, the course studies works of some 30 writers, from Chaucer through Virginia Woolf, in a year and a half. In the second semester of the Class I year, students study some modern and post-modern dramas, and then subdivide into specialized groups to study 20th-century texts by a limited number of writers. (Note: In electing this course, a student makes a two-year commitment that cannot be broken at the end of Class II.)

ENRC

### Reading Consciousness

What makes us human? Is it our body, our soul, our consciousness? Through an interdisciplinary study of literature, philosophy and religion, this course will investigate and interrogate our notions of humanity from antiquity to the contemporary era. By exploring topics such as the institution of slavery, the struggle for human rights, the invention of artificial intelligence, and the nature of spiritual transcendence, students will develop an understanding of the evolving definition of the human and insert their own voices into the current debate. This course will function as a “humanities lab,” with students directing its intellectual path; students will be responsible for posing critical questions, leading discussions, and formulating writing prompts. Assessments will include critical essays, personal reflections, and creative work. Readings will come from a diverse range of authors and thinkers including: Ralph Ellison, Charlotte Bronte, Harriet Jacobs, Kazuo Ishiguro, W.E.B. DuBois, Immanuel Kant, Catherine McKinnon, and Mary Shelley.

## Class I Electives

ENNF

### The Craft of Non-Fiction

This course is designed for students interested in the craft of writing and who wish to write about ideas, personal experience, and the sort of general interest topics (e.g., the arts, medicine, sports, nature, science, education) that appear in magazines such as *The New Yorker* and *The Atlantic Monthly*. It addresses three different genres of non-fiction: the feature article, a 4,000- to 5,000-word piece of investigative reporting; the essay of ideas, two or three 1,500-word reflective essays; and the memoir, a 4,000- to 5,000-word personal narrative. In each genre, students first read models and complete short, experimental writing assignments. The course differs from other Class I English courses in its high ratio of writing to reading and in its requirement that students revise each major piece of work to a high standard of professionalism. Critique by peers is an essential part of the writing process; students should expect to share their work with the class and to read and comment on the work of their classmates.

**ENFIC****Fictions**

We begin our philosophical journey with *The Magus*, the course's required summer reading. On the island of Phraxos in 1953, the mysteries of Bourani become the thematic and artistic questions of the course. Exploring the myths, creeds, and psychological and scientific principles that we live by in the Western world, we move from our encounters with freedom and truth to 19th- and 20th-century fiction. Continuing our historical and thematic exploration, we examine the fictions that man lives by as we study modern and contemporary literature. Reading selections vary from year to year. The following is a sample of works taught recently: *American Pastoral*, *The Collected Stories of John Cheever*, *Antony and Cleopatra*, *Betrayal*, *Oryx and Crake*, *The Road*, *The Gay Science*, *Studies in Modern Fiction*, *Beloved*, *Nemesis* and *A Farewell to Arms*.

**ENNR****Literature and the Nature of Reality**

This course looks at a variety of texts that explore, question and prod at the boundaries of the nature of reality. In studying novels, plays, movies, short stories and poems, we look not only at ideas in literature, but also at theories in psychology, science, morality, language theory and art. The class is divided into thematic units, though many texts will cross from one theme into others. Central to the class are the big questions: What is real? How do we judge reality? How and why does literature explore it? Possible authors include Albee, Beckett, Borges, Fadiman, Frayn, Kushner, Pirandello, Sacks, Stoppard, Twain and Woolf.

**ENCL****Modern Comparative Literature**

The course begins with summer reading of Dickens and Dostoevsky, two writers who were contemporaries but wrote in very different styles. Dostoevsky anticipates much of what is thought to be "modern" in the arts. From his example, students move to Kafka—who casts the longest shadow over modern literature—Joyce, Woolf and Camus. The last three writers of the fall term, García Márquez, Coetzee and Morrison, writing in the post-modern era, face the question of what artists do to distinguish their work when earlier authors seem to have tried everything. In the spring semester, students trace the same evolution of style and content in drama, immersing themselves in sixteen plays ranging from Ibsen and Strindberg in

the late-19th century to Suzan Lori Parks and Caryl Churchill, whose plays have been on Broadway in the last few years. Overall, the course emphasizes reading more than writing. In the fall, students write critical and creative pieces. During the spring, in an effort to "see" plays in performance rather than on the page, students meet in King Theatre and submit frequent short homework exercises with the occasional critical essay. During the spring project period, students will study a film unit of their choice. In past years, subjects have included *film noir*, the changing image of women in film, five great directors, great examples of five film genres, and five autobiographical films.

**ENPH****Philosophy and Literature**

This course investigates theories about the nature of humanity and moral philosophy, emphasizing a reasoned approach to thinking about complex and abstract problems. Topics include the basis of human knowledge, questions of freedom and determinism, the nature of evil, the nature of moral and aesthetic judgment, and the definition of social and political justice. Each unit takes its form around a main literary text and complementary philosophical readings. Students read traditional philosophers such as Plato, Aristotle, Descartes, and Kant as well as more modern thinkers such as Marx, Nietzsche, and Freud. Titles may include Lightman's *Einstein's Dreams*, Levi's *The Drowned and the Saved*, McCarthy's *No Country for Old Men*, Greene's *The Heart of the Matter*, and Shakespeare's *Measure for Measure*.

**ENSH****Shakespeare**

In this course, students read a dozen of Shakespeare's plays, including comedies, tragedies and histories, excluding those normally studied in previous years at Milton. Though the course touches on historical context and linguistic development, its main emphasis is on the plays as theater—the creativity they continue to stimulate in actors and directors and the response they continue to evoke from audiences. In addition to reading and writing (both critical and creative), the class compares movie versions, engages in impromptu performances, and may attend live theater as the opportunity presents itself. A self-designed project each semester gives students the chance to pursue, in depth, their interests in scholarship, art, photography, video production, music, theater design, and other fields.

**ENCWL****Themes in Contemporary World Literature**

What does it mean to be a global citizen? How has globalization shaped contemporary fiction? This course recognizes the multiplicity of narratives around us, not only from different countries, but also from different walks of life within those countries. In order to begin the conversation about the many stories that define each of us, we will read pairs of texts selected from several regions around the world. Pairs will likely include: *The Farming of Bones* by Edwidge Danticat and *The Brief Wondrous Life of Oscar Wao* by Junot Díaz (the Caribbean); *Slumdog Millionaire*, produced by Danny Boyle and *White Tiger* by Arvind Adiga (India); *Americanah* by Chimamanda Ngozi Adichie and *We Need New Names* by NoViolet Bulawayo (Africa); and *Snow Country* by Yasunari Kawabata and *Kitchen* by Banana Yoshimoto (Japan). Assessments in this course will include opportunities to write critically, to write in the style of a contemporary author, and to write one's own contemporary world literature story.

**ENTWD****Three Writers in Depth**

By limiting the number of writers we study, this course allows students to examine each writer longer and more intensively than is possible in other courses. Opportunities presented by the course include following the evolution of an author's style and choice of subject matter and theme; exploring one author's approach to different literary genres; and placing an author in historical and biographical context. Written work consists of both critical essays and creative pieces, perhaps using as inspirations the style or thematic content of the works being studied. The teacher selects the first two writers; after the school year has begun, teacher and students together will select the third. The following list suggests the stature of the writers likely to be chosen: Auden, Austen, Baldwin, Beckett, Conrad, Dante, Eliot, Faulkner, Frost, García Márquez, Hemingway, Ibsen, James, Joyce, Morrison, O'Neill, Swift, Thoreau, Tolstoy, Williams, Woolf, Yeats.

**EHAMH****Hamlet**

(Half Course)  
*Classes I & II*

By devoting a full year to the play widely regarded as the greatest in English, this

course, team-taught by a member of the English department and a member of the performing arts department, offers students several unique opportunities:

- to enjoy the in-depth study of a single text, with no pressure to move on; and to experience fully the richness that a very complex literary text provides;
- to approach a Shakespeare play actively by performing, directing and designing parts of the text, and in doing so discover a full range of possible interpretation;
- to join the literate world in knowledge and appreciation of a classic work;
- to explore the deep personal resonances that this work, perhaps more than any other, seems always to evoke;
- to gain familiarity with the problems and processes of literary scholarship.

Most class time is spent reading and discussing *Hamlet* and comparing different film versions. Students, individually or in groups, formulate long-term projects that they complete during homework time. Projects, which may be critical or creative, have covered a broad range, including theatre design, filmmaking, creative writing, textual analysis, memorization and performance, graphic art, psychology, music, and research into the play's historical and literary background.

## IDPSH

### Project Story: Narrative Journalism and Performance

*Classes I & II  
(Half Course)*

From competitive story slams performed for packed venues to storytelling courses designed to empower workplace professionals, sharing narrative with live audiences has never felt more current or relevant. In this course, students will study the art of storytelling through moving their own and others' stories from page to stage. During the first semester, students will learn narrative journalism skills, performance skills, and peer workshop practice, to collect and shape stories of our School. They will work collaboratively during the second semester to identify, research, write and perform a story that originates beyond Milton Academy. Throughout the year, students will read and view storytelling models, attend performances, and hear from visiting artists and activists who promote storytelling around the country, believing that shared stories strengthen and sustain human connection. *(This course is listed under both the English and performing arts departments.)*

## APCW

### Creative Writing

*Satisfies Arts Program Requirement  
Classes I, II & III*

This course offers workshops in shaping ideas, personal observations, and memories into fiction and poetry. It teaches techniques of each genre and employs frequent reading and discussion of student works within the class.

## EACWH

### Advanced Creative Writing

*(Half Course)*

Meeting twice a week in a format that consists of a writers' workshop and individual conferences, this course provides the student-writer the opportunity to continue to develop talents. *(Prerequisites: Creative Writing and permission of the creative writing teachers.)*

## EACW2

### Advanced Creative Writing 2

*(Half Course)*

This course allows those who have successfully completed Advanced Creative Writing to continue working in the same format. *(Prerequisites: Advanced Creative Writing and permission of the creative writing teachers.)*

## Language Skills

## ELEX

### Exposition

*Classes III & IV*

The English department offers a diploma credit course for students in Classes III and IV who desire intensive instruction for improvement of verbal skills and study techniques. The course focuses on developing the skills necessary for clear, correct and forceful expository writing of the sort required by all disciplines at Milton. This course includes a thorough study of grammar; an introduction to key concepts about writing; and a series of essays and longer projects aimed at helping students learn to write in a step-by-step process that includes planning, drafting, revising and editing.

*Enrollment in this course is limited and is granted by permission of the department. A Class IV student who wishes to take Exposition in Class III must first consult with his or her current English teacher.*

The history and social science program is designed to provide students with a curriculum that will allow them to think imaginatively and critically about the world. Department offerings include a core of required global and American history courses, as well as history and social science electives that examine a broad range of cultures, civilizations, and elements of the human condition. To fulfill Milton Academy's diploma requirements, students must take two history courses: Ancient Civilizations or Modern World History (in Class III or IV) and United States History (in Class I, or II or III). The history requirement may also be met by the two-year course, The United States in the Modern World. Students who have already taken Modern World History (in Class III or IV) may not take the two-year course.

## HAME

### Ancient Civilizations

*Class IV*

This course serves as an introduction to the study of history. It examines a wide range of societies across the ancient world from East Asia to Western Europe to sub-Saharan Africa. Readings focus on the effects of geography on the growth of civilization, the interaction of cultures, the evolution of social and political institutions, religion and philosophy. Students read a significant number of primary sources as well as secondary accounts and interpretations. The course emphasizes building analytical thinking and reading and writing skills. In the spring semester, students conduct a major project in library research. *(Class III students may enroll in Ancient Civilizations with permission of the department.)*

## HMWH4

### Modern World History: Class IV

*Class IV*

This course serves as an introduction to the study of history. It examines the chaotic and fragmented world of Eurasia after the Mongol imperium; out of this general chaos, the Chinese and Islamic empires established their preeminence in an already long-interconnected Asia. At the same time, European states—through exploration, exploitation, colonization and revolution—created the beginnings of a globally-connected modern world. Hence, we will trace the world from the 1500s to the end of the 20th century, and

we will examine closely the ideas, individuals and events that shaped this new world. Students read a significant number of primary sources, as well as secondary accounts and interpretations. The course emphasizes developing analytical thinking, reading and writing skills. In the spring semester, students will conduct a major project in library research.

#### HMWH

### Modern World History

*Classes II & III*

This course begins with an intensive study of the early modern world—a period characterized by increasing global contact and parallel evolution of economies, states and cultures. We compare Confucianism in Ming China, Islam in the Ottoman and Mughal Empires, and Christianity in Reformation Europe. We will consider the developments and repercussions of the French and Haitian revolutions, triangle trade, the Industrial Revolution and the onset of nationalism, Marxism and feminism. Our study will conclude with an examination of power and supremacy in the 20th century. We will emphasize the skills of close reading, interpretation of primary and secondary documents, and essay writing. Students will complete a major library research project in the second semester.

#### HUSMW1

### The United States in the Modern World 1

#### HUSMW2

### The United States in the Modern World 2

*Note: In electing this two-year course, which fulfills the graduation requirements for both world history and U.S. history, the student understands that both years of this course must be completed, preferably consecutively, to receive graduation credit.*

*Students who have already taken Modern World History in Class III or IV at Milton will not be able to take this course.*

*HUSMW 1*

*Classes II & III*

The story of economic and political revolution—where its origins lie in the 15th and 16th centuries, how it is carried out in the 17th and 18th centuries, and how it re-shapes the world in the 19th century—is the story of this course. Students will study the modern history of the great empires of Eurasia, encounters between the peoples of Europe and the Americas, expansion of trade and

technology, and the development of political ideologies. The American experience, from the voyages of Columbus to the Civil War, will be placed within the larger context of the modern world. Students will complete a major library research project in the spring semester.

*HUSMW 2*

*Classes I & II*

The United States takes a central role in the second year of this course, beginning with the impact of the Civil War and industrialization on both domestic and foreign policies. Questions of new thought in social relations, in the application of science and technology, and in governmental roles and responsibilities in the United States and in selected other nations will be studied, so that the discussion of revolutionary change begun in the first year continues and broadens. A close consideration of several Cold War topics in the second semester will enable students to reach a greater understanding of the problems faced by the 21st-century world, in particular the impact of human history on the natural world. Students will complete a major library research project early in the second semester.

#### HUS

### United States History

*Classes I, & II and III*

Conceptual and interpretive in nature, this course examines both the important documents (e.g., Declaration of Independence, United States Constitution, Gettysburg Address, and speeches of Frederick Douglass, Susan B. Anthony, Martin Luther King, Jr. and John Kennedy) and the multiple historical interpretations of an event or personality in the American past. Looking at the tension between freedom and order, democracy and slavery, urbanization and populism, gender and politics, localism and nationalism, students begin to see and understand that the principles and ideas fought for at the time of the American Revolution are unresolved in the later 19th and 20th centuries. Students will complete a major library research project in the spring semester.

*(Prerequisite: Ancient Civilizations or Modern World History)*

## Advanced Topics in History

*Class I*

#### HAFAP

### African-American History

*(Semester 1)*

In this course, students examine the African-American experience with an emphasis on individual and collective agency, political protest, and efforts to initiate social change. The course is organized chronologically. Students begin their study in 15th century Africa before moving quickly to the trans-Atlantic slave trade, and the historical foundations of black life in the antebellum and postbellum periods. The second half of the course stresses more contemporary issues of the 20th and 21st centuries. Throughout, students will grapple with questions that pertain to isolation and identity; individualism and collectivity; race and struggle; resistance and joy; African American history and United States history.

#### HMCF

### History of Modern China

*(Semester 1)*

Traditional Chinese historians see China's long and often triumphant history as a series of dynastic cycles, replete with periods of greatness and decline. The fall of the Ming and the rise of the Qing in 1644, as well as China's reemergence as a major economic, political and military power in the late 20th century, can be explained in this historical context. But in order to fully understand the growing might of a "New" China, one must first examine the cultural, philosophical and political elements that have endowed the Chinese state with a degree of resilience unmatched elsewhere. We will begin with a careful analysis of the Ming and Qing periods in order to identify the core elements that constitute Chinese civilization. We will then examine how they directly influence the domestic and foreign policies of the People's Republic, specifically in the context of political liberalization, ethnic minority relations, and global economic integration. Course material includes primary documents, secondary text and relevant films. Students should expect to write analytical essays of reasonable length (3–5 pages) every two weeks. The format of the class is in the seminar style commonly associated with college courses.

**HMEF****History of the Middle East***(Semester 1)*

This course examines the history of the Middle East from 1900 to the present. The geographic focus will be Egypt, Iraq, Iran, Israel, Saudi Arabia and Turkey. We will keep two broad questions in mind as we follow the current political and social developments in the region: 1) What impact did Western imperialism and the process of decolonization have on society and politics in the Middle East? and 2) How did the US invasion of Iraq in 2003 start a process that has led to a reordering of the modern Middle East? Students will conduct individual research on the topics of their choice at the end of the semester. For students wanting to continue their study of the contemporary Middle East, the course of Globalization and Islam in the second semester builds on themes covered in this course.

**HASAS****Asian American History***(Semester 2)**Not offered in 2017–18*

Asian Americans constitute the fastest growing population in the United States. Students will explore the history of this diverse community from 1850 to the present. Throughout this period, Asian Americans have been characterized as either the “model minority” or the “yellow peril.” By focusing on the experiences of Chinese, Japanese, Korean, Filipino, Asian Indian and Vietnamese Americans, students will develop a dynamic understanding of the documentation and interpretation of this history. Documentary films and readings about immigration policy, international relations, labor history, community development and political empowerment will be the focus of our studies. Students will conduct an oral history project at the end of the semester.

**HGIS****Globalization and Islam***(Semester 2)*

This course will explore the relationship between globalization and Islam in the post-9/11 world. Using readings from current scholarship, we will examine Islam in the context of the contemporary Middle East, Europe and the United States. We will also study ways in which the Arab world has been

shaped by economic, political and social realities created by globalization. The first part of the course will introduce students to broad topics in globalization. Then we will work to understand Islam as a religion and consider how it is practiced in both the Arab and non-Arab worlds. The third part of the course will focus on the complex relationship between globalization, American foreign policy and the rise of religious extremism in Europe and the Middle East. This course offers an optional trip to Jordan during the March vacation.

**HTMWS****Topics in Modern World History: In the Aftermath: Case Studies in Transitional Justice***(Semester 2)*

What should happen after a government’s violence against its citizens? Who should decide? The class will focus on specific case studies to explore three kinds of responses to government crimes against citizens: the policies of official forgetting (e.g., post-Franco Spain; Argentina); truth telling and reconciliation movements (e.g., post-apartheid South Africa; Australia); international prosecutions (e.g., Khmer Rouge in Cambodia); and reparations (e.g., Canada/First Nation Peoples; US government/slavery). We will also explore responses from artists, filmmakers, theologians, psychologists and survivors to understand the challenges and promise of transitional justice. Projects will include persuasive and analytical writing along with training for and practice of interviews, mediation and mock trials.

**History Electives***Classes I & II***HCVRH****History of Civil Rights***(Half Course)*

In this course, we will examine a number of questions about the struggle for justice and equality in the United States. What did the civil rights workers of the 1960s hope to accomplish? What were they able to achieve? How did American society respond to this movement for social change? The first half of the course is devoted to understanding the relationship between oppression and resistance, focusing on the legacy of segregation. We will then take a look at the events that shaped the modern civil rights movement.

Course work includes journal writing, reaction papers, and a final research project about a contemporary civil rights issue. This course challenges students to develop a clear historical perspective about one of the most revolutionary periods in our history.

**Social Sciences***Classes I & II***HGPF****American Government and Politics (AP)***(Semester 1)*

The heart of this course is an examination of the interactions between the policy-making institutions of the United States government (Congress, the presidency and the executive branch, and the Supreme Court) and the nature of American political parties, interest groups, the media, and the American electoral practices. With a focus on current events and the 2016 elections, we will begin to see how the United States’ constitutional underpinnings are enforced and complicated by political culture. Through this course, students will be engaged in following political events in and out of the class, as well as partaking in independent research as a way to understand and contribute to political processes. Ultimately, this course will equip students with the foundational understandings to engage thoughtfully and purposefully in politics, while also allowing for the practice of political communication and discourse—all of which are incredibly important in our increasingly polarized political climate. *(This course prepares students for the AP examination in American Government. Note: To enroll in this course, students must have taken or be taking United States History or U.S. in the Modern World.)*

**HCGS****Comparative Government (AP)***(Semester 2)*

In this course, we will develop the skills and habits of mind required to study and thoughtfully participate in our global political landscape. Through concrete historical and present day examples, we will analyze the current literature and theoretical basics of comparative politics, and question why governments and institutions around the world take the form they do. We will spend a significant amount of time studying the

six countries specified in the AP syllabus: the United Kingdom, Iran, China, Russia, Nigeria, and Mexico. Through these case studies, we will hope to uncover and answer two essential questions: What defines and complicates democracy? And how does change occur and endure? By questioning the legitimacy of governments, the distribution of power, and the roles of culture, leaders, and institutions, we will use history to explain current trends and make future predictions. Ultimately, every aspect of the course will culminate in project-based assessments that apply comparative politics to the case of the Arab Spring. *(This course prepares students for the AP examination in Comparative Government.)*

**HPEF**

**HPES**

### Principles of Economics

*(Semester 1 or 2)*

This course introduces students to the basic principles of both micro- and macroeconomics. The first half of the course will explore the basic economic concepts of scarcity, opportunity cost, and supply and demand analysis. It will then cover market structures and failures. The second part of the course will focus on the whole U.S. economy. It will cover such economic concepts as gross domestic product, economic growth, inflation, unemployment, monetary and fiscal policy and their possible causes and cures, and how they affect both individuals and the economy as a whole. This course will prepare students for both Behavioral Economics and Topics in Global Economics.

**HGES**

### Topics in Global Economics: Sustainable Development in the 21st Century

*(Semester 2)*

This course aims at stimulating students to analyze and critically evaluate the main global economic issues and their impact on individuals, companies and institutions. This course will examine the issues of poverty, inequality, growth and the human consequences of globalization within the framework of a sustainable future. This course relies on basic principles of economics to understand economic realities and policies in the US and abroad.

**HBES**

### Behavioral Economics: The Burdens of Decision-Making

*(Semester 2)*

This course explores the relatively new field of behavioral economics and works to revise standard economic models of human behavior by integrating psychology and economic thought. We will quickly discuss and dissect conventional economic theory and use that as a jumping off point to answer questions of behavior such as: How do people make decisions on what cereal to eat? Why do people feel more comfortable paying a dinner bill with a credit card instead of cash? What is the role of altruism, equity and fairness in our society and world? We will discuss these questions and many others throughout the semester. This course relies on the basic principles of economics to understand human decision making.

**HSPSYC**

### Psychology Seminar

*(Full Course)*

This college-level course introduces students to the field of psychology through hands-on experiences with research and treatment design. In addition to learning about major areas within the field of psychology—including cognition, neurobiology, socio-emotional bases of behavior and human development—students will be required to work in teams and expected to improve their observation, leadership and presentation skills. Although it is not required, students may find it helpful to have taken or be taking biology and statistics. *(Topics in Psychology is NOT a prerequisite for this course. Most of the topics students will need to cover in order to take the AP examination in Psychology will be studied during the year.)*

**HPSYH**

### Topics in Psychology

*(Half Course)*

This course explores topics within the discipline of psychology, including development, personality theory, abnormal psychology, social psychology and learning. Through these topics, students also study the thought of foundational and contemporary theorists within the field of psychology. Course content integrates reading from the textbook and primary sources, as well as watching film from a psychological perspective. Students are encouraged to reflect on the material in

both personal and academic ways and are evaluated through interactive learning projects, analytical essays, a mid-term exam, and classroom discussions.

**HRMEF**

### Religions of the Middle East

*(Semester 1)*

The Middle East is the birthplace of three of the world's great religious traditions—Judaism, Christianity and Islam. It is also a center of conflict, often stemming from religious differences. In our shrinking and pluralistic world, having knowledge of religion has become increasingly important in order to be an informed citizen. Taking a global and historical view, this course examines the development of each of the Middle Eastern religions, analyzes their connections, and contemplates the source of their tension. Students will study each religion on its own terms through class discussion, primary texts, film, and inquiry into the spiritual and religious practices of each tradition.

**HRAS**

### Religions of Asia

*(Semester 2)*

Modern historical events such as the liberation movement in India, the Chinese invasion of Tibet, and globalization have resulted in a closer association between the Western world and Asia. Throughout the 20th century, the West's intrigue with Asian beliefs, philosophy and practices has intensified. This course explores the growing interest in Asian culture by focusing on the religions of the region—Hinduism, Buddhism, Taoism and Zen—and charting their histories and influence in the global community. Students will study each religion on its own terms through class discussion, primary texts, film, and inquiry into the spiritual and religious practices of each tradition.

**HJDWH**

### Activism for Justice in a Digital World

*(Half Course, Class I–III)*

How do activists work to create a more just society in the United States and in the world? How are they combining new social media tools and traditional service activities to address problems of poverty, homelessness, hunger, educational inequity, healthcare, the environment and immigration? How can you

## Independent Courses

make a difference? This course will explore current issues through readings by contemporary authors and news sources, as well as historical documents, speakers, and field trips into Boston. An integral component of this exploration will be students' firsthand experiences through weekly service commitments to local sites (with homework time allocated to this hands-on work). Course work includes journal writing, short papers, and action projects.

Students in Classes I through IV whose interests go beyond regular curricular offerings may petition to pursue an independent course for academic credit with an appropriate faculty sponsor in any academic field. A student may make arrangements to work with a qualified outside mentor/teacher provided that a Milton Academy faculty member in a related field assumes sponsorship of the course and agrees to oversee the course through regular conversations with both mentor and student. Occasionally a student, at his or her expense, enrolls at a neighboring college or university for an independent course. Regular meetings with the Milton faculty sponsor are required. If the course ends before the close of Milton's semester, students are expected to continue study with his or her faculty sponsor until the end of our term. In all cases, the faculty sponsor will be responsible for assigning and submitting grades and for making sure comments are submitted on time. Credit will not be granted for courses that duplicate those offered by the Academy. Independent courses may be full, half or semester courses depending on the depth and breadth of the study.

Application forms are available in the registrar's office. Students should submit the form with all required signatures to the registrar's office and email completed course proposals to the chair of the Independent Course Committee by May 2 for the following school year, or by December 2 for the second semester. Course proposals must include a course description including an outline of topics with objectives, a bibliography, meeting times, and evaluation methods and criteria. Applications will be accepted late (by the end of the first full week of school) only from students who show good reason for being unable to apply the previous spring (e.g., a scheduling conflict). A Class I student who intends to pursue a second-semester independent course must apply the previous spring if he or she wishes the course to appear on the School transcript submitted to colleges in the winter.

*Note: Any second-semester independent course must continue to year's end in June either as a course or as a spring project.*

*Note: Students will normally be limited to one independent course at any given time.*

## Mathematics

Milton's mathematics curriculum is designed to encourage students to develop their understanding of a rich variety of mathematical concepts, to recognize the spatial and quantitative dimensions of the world in which they live, and to appreciate the logical principles that inform those concepts. The department's program of study acknowledges students' varying aptitudes for this discipline. Therefore, the department offers different levels in several courses, and placement in a specific level requires the permission of the department. Honors level courses have an expectation of depth, extension, abstraction and independence in problem-solving that lends itself to identifying connections across topics. Some aspects of the course move more quickly than regular or foundations courses. Regular level courses include a structured approach to problem-solving and exploration that builds connections across topics, and allows time to consider many concepts in a real-world context. Foundations level courses provide adequate time for additional skills practice and application. Successful completion of Geometry and Algebra 2 fulfills the diploma requirement.

Students are expected to have a graphing calculator (beginning in Algebra II). The department supports the TI-83 or TI-84.

### Math 1G—Algebra 1 with Geometry

MA1G

This course is designed for students who have not taken a full-year algebra course, or who need to strengthen their algebra skills. The course also helps students to learn the fundamentals of geometry. This course will use geometric and graphing software to explore the key concepts, which include: linear, quadratic, exponential, and absolute value functions and equations; parallel lines, triangles, polygons, congruent and similar figures; and circles, area and volume. Upon successful completion of this course, students will proceed to Algebra 2. Enrollment in this course is limited and is granted by permission of the department.

## Math 2—Geometry

**MA21** —Honors

**MA22** —Regular

Students come to this course with a substantial store of information about geometric relationships gained in previous coursework and through informal experiences. This course formalizes and extends their knowledge by emphasizing an axiomatic development of these relationships. Through explorations using software programs that allow the user to construct dynamic geometric models, students make conjectures about, and then investigate and prove, geometric relationships. Topics covered in this course include parallel lines, triangles, polygons, congruent and similar figures, circles, triangle trigonometry, coordinate geometry, area and volume, and a basic introduction to computer programming.

## Math 3—Algebra 2

**MA31** —Honors

**MA32** —Regular

**MA33** —Foundations

This course builds upon the foundation developed in Algebra 1 and extends students' knowledge and understanding of algebraic concepts. The course emphasizes visual and symbolic analyses of linear, quadratic and exponential functions, as well as exponents, logarithms, sequences and series, optimization, transformations and triangle trigonometry. Other topics may include introductions to data analysis, conic sections and the properties of real and complex numbers. *(Prerequisite: Geometry)*

## Math 4—Precalculus: Functions with Mathematical Modeling

**MA41** —Honors

**MA42** —Regular

**MA43** —Foundations

This course examines the structure, application and connections between polynomial, exponential, logarithmic and trigonometric functions, along with rational functions and limits. The course also considers some discrete math topics, including combinatorics, probability and an introduction to statistics. Projects will allow students to pursue particular interests and see real-world connections. Goals of this course include building critical thinking and mathematical communication skills. *(Prerequisite: Algebra II)*

## Calculus

**MCAL1** —Honors

**MCAL2** —Regular

**MCAL3** —Foundations

In this course students use limits of infinite processes to develop differential and integral calculus; they then use these concepts to create mathematical models. The abstract properties of elementary functions are re-examined in light of these new techniques; problems drawn from the natural and social sciences provide opportunities to apply these new concepts. *(Prerequisite: Precalculus.)*

## Calculus and Applied Economics (Honors)

**MCAE**

This class will introduce students to the essentials of single variable calculus and the principles of economics. Students will explore the central concepts of calculus: limits, derivatives, integrals and the Fundamental Theorem while emphasizing applications to economics. The course will also illuminate the central concepts of economics, particularly microeconomics. Economics is the study of the way consumers and producers interact in markets, and the economic way of thinking centers on cost-benefit analysis. The course will use the tools of calculus to model consumer and producer behavior and to analyze the social welfare effects of government policies. *(Prerequisite: Precalculus.)*

## Calculus (Accelerated)

**MCALA**

This course uses limits of infinite processes to study rates of change and areas under curves. We will then reexamine abstract properties of elementary functions in light of these new techniques. Problems drawn from the natural and social sciences provide opportunities to apply these concepts. Additional topics include infinite series, parametric equations, vector analysis, and an introduction to differential equations. *(Prerequisite: Precalculus Honors and permission of the department.)*

## Statistics

**MAST1** —Honors

**MAST2** —Regular

Statistics is the science of collecting, organizing and interpreting data. Students in this course learn how to analyze data from existing data sources as well as data collected from student-designed surveys and experiments. Students will also learn the importance of randomization in the collection of data and critique the validity of third-party data. This course investigates the underpinnings of probability theory, random variables and probability distributions as the basis for inferential statistics. Finally, students will apply all of these techniques to real-world and self-designed studies. Students gain mastery using a variety of technologies, including, but not limited to: MyStatLab, StatCrunch, spreadsheets and the calculator. *(Prerequisite: Precalculus or permission of the department.)*

## Advanced Calculus and Mathematical Statistics (Honors)

**MALST**

This course is a calculus-based introduction to mathematical statistics. The course will cover basic probability, random variables, probability distributions, the central limit theorem and statistical inference, including parameter estimation and hypothesis testing. There are three main goals of this course: to learn the language of probability, to improve statistical intuition, and to use calculus to express and prove random concepts. Set theory, limits, sequences and series, additional methods of integration, multiple integrals and elementary differential equations will be covered. *(Prerequisite: Calculus.)*

## Multivariable Calculus

**MAMC**

This course will cover topics in multivariable calculus, including vectors, vector functions, partial derivatives, multiple integrals and vector calculus. Additional advanced topics may be included, at the discretion of the instructor. *(Enrollment by permission of the department. With departmental permission, this course may be taken concurrently with Advanced Calculus and Mathematical Statistics (Honors) or Abstract Algebra and Group Theory.)*

# Computer Programming

## Abstract Algebra and Group Theory

**MAGTA**

This course is a proof-oriented introduction to the study of concrete categories such as sets, groups, abelian groups, fields, and vector spaces, focusing on the morphisms (functions), sub-structures, quotients, and actions within each category. Within Group Theory, topics include Lagrange's Theorem, Cayley's Theorem, The Isomorphism Theorems, and possibly Sylow's Theorems. Within Linear Algebra, the course will focus on coordinate vectors, dimension, matrix representations of linear transformations, change of basis, determinants, and possibly eigenvectors. In the spring term, Linear Algebra will be applied to the study of Differential Equations. If time permits, rings, modules and topologies may also be considered. Specific attention will be given to the interplay between categories, which may involve the study of diagrams and functors. *(Enrollment by permission of the department. With departmental permission, this course may be taken concurrently with any course beyond Precalculus.)*

## Advanced Topics in Mathematics

*(Semester 1, Semester 2)*

**MATMF**

**MATMS**

This course permits students to pursue explorations in the field of mathematics at an advanced level, for students who have already studied calculus and statistics. Topics may include number theory, topology, combinatorics, field theory, game theory or graph theory. Designed to meet the needs of the students with mathematical ideas they wish to explore in depth, this course is a seminar-style exploration of a particular field. Note: When there is a need, and staffing permits, this course may be offered as a half course. *(Prerequisite: Calculus and Statistics and permission of the department.)*

Computer programming courses vary to reflect the fast pace of change in computing languages and our desire to relate coursework to student interests. Computer programming courses are open to all students, whether novice or experienced. The sequence begins with the introductory course, Computer Programming 1. The advanced courses require permission of the instructor. Please direct any questions to Mr. Hales.

**MACS1H**

## Computer Programming 1

*(Half Course)*

This project-based course is an introduction to computer programming. No prior knowledge of computing is needed. Using the development of video games, students learn the basic concepts of programming and the fundamentals of the Java programming language. Game topics covered include user control, decision-making, graphics, sound, character artificial intelligence and animation. Students develop problem solving and logical thinking skills through object oriented programming and algorithm design.

Second semester projects allow students to explore more advanced topics and work on larger projects of their own choice. Past projects include writing multilevel video games, music composition software, and optical character recognition software. The design and implementation of this course is unique, allowing students to master many basic concepts in programming while also developing compelling projects.

**MACS2H**

## Computer Programming 2

*(Half Course)*

This course is intended for students who have completed Computer Programming 1 or who have learned equivalent material and received permission to enroll. It includes topics such as data structures, database programming, recursion, pathfinding algorithms, game AI programming, networking, graphical user interfaces, web programming and control systems. The content and emphasis of the course are adapted each year to the interests and experience of the students. The course is taught using Java, PHP and other languages. In recent years, students have written Internet network programs, studied artificial intelligence to fly a quad-copter (also built by students), created projects around Arduino and Raspberry Pi single board computers and written games based on harvested Twitter data. *(Permission of the instructor is required.)*

**MACS2/3**

## Computer Programming 2 & 3: Computer Programming and Applications

*(Full course)*

This course is intended for students who have completed Computer Programming 1 or who have learned equivalent material and received permission to enroll. The course begins with topics such as data structures, database programming, recursion, pathfinding algorithms, game AI programming, networking, graphical user interfaces, web programming and control systems. The content and emphasis of the course are adapted each year to the interests and experience of the students. After learning the above concepts, students apply them to handheld app development (iPhone and Android). Students will design applications for Android and then for iOS, using a variety of programming languages, including Swift, Java, SQL and PHP. Recent class projects include the Milton Academy Students application (available at Google Play and iTunes for free), Internet network programs, a study of artificial intelligence to fly a quad-copter (also built by the students) and games based on harvested Twitter data. *(Permission of the instructor is required.)*

**MACS3H**

## Computer Programming 3: Programming Applications

*(Half Course)*

This course exposes students to practical applications of programming. The focus is on developing applications for handheld devices (iPhone and Android). Other topics covered are based on student interest and emerging technologies. Students design applications for Android and then for iOS, learning the relevant material to do so. The coursework will use a variety of programming languages, including Swift, Java, SQL and PHP. A recent class project is the Milton Academy Students application (available at Google Play and iTunes for free). *(Permission of the instructor and prior programming experience are required. With departmental permission, this course may be taken concurrently with Computer Programming 2.)*

# Modern Languages

MACS4H

## Computer Programming 4: Applied Mathematics and Artificial Intelligence

(Half Course)

This course will guide students through artificial intelligence as well as mathematical concepts in computer programming, including linear algebra, triangulation, the inverse square law and decay. Using a variety of programming languages, students will work on two major projects, which will incorporate cutting edge technologies, artificial intelligence and previous programming knowledge. It is not uncommon for projects to also include some engineering components. Previous projects include building a smart refrigerator that dynamically tracks inventory, neural networking software, and mapping software used to identify nearby Wi-Fi hotspots. (Prerequisite: Computer Programming 2. With departmental permission, this course may be taken concurrently with Computer Programming 3.)

The study of modern languages opens doors to a greater understanding of the world and its cultures. Language study can broaden students' global view and provide unique opportunities at Milton and beyond. We hope students will achieve a level of proficiency that enables them to use the language to communicate and to appreciate different ways of seeing the world. The diploma requirement is met by successful completion of a Milton Academy level 3 course. We encourage students to continue their studies beyond the level 3 requirement since the courses offered at level 4 and above provide special opportunities to examine the culture in depth through literature, art, film, history and current events.

The modern language department offers classes that support a wide variety of students' abilities and areas of interest. To merit placement in Honors, Accelerated or Advanced Placement levels, students must have an exceptional ability, a record of outstanding performance, and a demonstrated passion for language learning.

## Intensive Language Courses

These are accelerated courses designed for Class I students (and students in Class II with special permission). Each is the equivalent in difficulty and pace to a first-year college language course and is open only to students who have completed the language requirement through study of another language. (Offered subject to sufficient demand.)

CHINT

### Intensive Chinese

FRINT

### Intensive French

GRINT

### Intensive Classical Greek

LAINI

### Intensive Latin

SPINT

### Intensive Spanish

*Note: A student who enters in Class II and does not qualify to enter at least Level 2 in a language offered at Milton will be placed in a foreign language at the level that is most appropriate for the student's growth and development and will be expected to take two years of that language (ancient or modern).*

## French

FR1

### French 1

This course provides an introduction to French through essential grammatical structures, idiomatic expressions and everyday vocabulary. Students use French in skits, dialogues, and oral and written presentations. Students learn to express themselves in real life situations. They also learn about various French-speaking cultures through activities, songs, art and short stories.

FR1P

### French 1P (Prior Study)

This course is intended for students who have previously studied French but who need to strengthen their foundational language skills before taking French 2. This course has the same objectives as French 1 but allows for a greater depth and variety of activities, given the students' previous experience with the language and culture.

FR2

### French 2

For students who have completed French B, French 1 or French 1P, this course continues to develop oral and written command of all basic structures in French and introduces the reading of short books such as *Le Petit Nicolas* and *Le Petit Prince*. Many other cultural readings, projects and audio-visual materials connect students to various aspects of daily life in France and in the French-speaking world.

FR21

### French 2 (Honors)

The goal of French 2 Honors is to continue to develop oral and written command beyond basic structures in French and to inspire integrated and creative use of the language. Students continue to acquire grammar skills and vocabulary through readings such as *Le Petit Prince* and short stories by Le Clezio and Anne Gavalda. In this course students will start with an introduction to reading to advance to literary analysis. Great emphasis

will be placed upon communicating accurately and effectively in the four modalities: listening, speaking, reading, and writing. Students will expand their knowledge and deepen their cultural understanding and sensitivity. Placement is at the discretion of the department.

### FR3

#### French 3

This course continues to develop the requisite skills of this level in speaking, listening, reading and writing. It makes use of authentic sources such as film, art, songs and media. Literature is introduced through readings by authors such as Maupassant and Le Clézio. French 3 includes a systematic review of grammar and practice of the language through frequent writing assignments, speaking practice, and discussion of cultural and current events.

### FR31

#### French 3 (Honors)

This course provides a rapid expansion of vocabulary and grammar through reading and writing. Students will be asked to write compositions of increasing complexity. Students continue to strengthen oral skills through activities ranging from review of current events to literary discussions. Reading skills are developed through an introduction to classical and modern authors such as Molière, La Fontaine, Maupassant and Le Clézio. Placement is at the discretion of the department.

### FR4CL

#### French 4: Topics in Contemporary Culture and Literature

In French 4, students embark on a journey into contemporary French culture and literature while strengthening their language skills. Students will study grammar and vocabulary in context and practice using French through a variety of oral and written activities. French 4 gives students all the necessary linguistic tools to analyze works of literature, to articulate their opinion on current events, and to review films. Among the materials included in this course are the play *Huis Clos* by Jean-Paul Sartre, *No et Moi* by Delphine de Vigan, and several short stories from contemporary French authors. These works are the base of a much broader exploration of the French culture through the use of different media.

### FR4AP

#### French 4 (AP): Language and Literature

Both a language and a literature course, French 4 (AP) further develops speaking, reading and writing skills to a more advanced level while preparing students for the French AP language exam. Students will study grammar and vocabulary in context and practice using French through a variety of oral and written activities. Students will achieve greater fluency in their analyses of cultural topics, literary texts, cinema and other media. Reading materials included in this course are *Née en France* by Aicha Benaïssa, the play *Huis Clos* by Jean-Paul Sartre, *Les Français* by Lawrence Wylie, and poems by Prévert and Rimbaud. Students will also study movies by Laurent Cantet and Eric Zonka. Placement is at the discretion of the department.

### FR5HN

#### French 5 (Honors): A Further Exploration of Literature

This course is intended for students who have completed the AP language program and who have expressed an appreciation of French literature in previous courses. Covering classic writings—from the poetry of Baudelaire to contemporary works of French speaking authors from Africa and the Caribbean—this course aims to refine the skills that are essential to enjoying and studying literature at an advanced level. This course prepares students for the study of French at the college level and, specifically, the college-level technique of close literary analysis. Placement is at the discretion of the department.

### FR5F

#### French 5: The Francophone World

(Semester 1)

Focusing primarily on the French Caribbean and the island of Haiti, a country that has strong ties with French history, language and culture, this course allows students to continue to improve their language skills while developing an understanding of the Francophone world. Students will have an opportunity to interact with members of the local Haitian community through visits from guest speakers, site visits, and service learning trips. Ultimately, students will venture out of the classroom and establish a relationship with Boston's Haitian community. By doing so, students will not only discover that they can use their French only a few miles

from Milton Academy, but they will also get to know, through hands on projects, the work of the Haitian local non-profits in the Boston area. Throughout the course, students will learn to analyze and discuss the culture of Haiti and its diaspora in relationship to Haitian and French history, socio-linguistics, and politics. Materials, entirely in French, will include online articles, essays, documentary films, oral/audio folk tales, feature films, works of art, songs, and excerpts from major literary works by French Caribbean authors such as Raphaël Confiant, Simone Schwarzbart, Patrick Chamoiseau, Maryse Conde, Aime Césaire and Edwidge Danticat. (Open to students who have completed French 4 (AP), French 4, or with permission from the department.)

### FR5S

#### French 5: Twentieth-Century France Through Its Cinema

(Semester 2)

This course focuses on the issues of coming of age and living in French society as seen through the eyes of major French and Francophone directors ranging from François Truffaut to Cédric Klapisch. The course also looks at cinema as a language of its own, starting with early silent movies by the Lumière Brothers and culminating with the experimental technique of directors such as Claire Denis. Students taking this course will become familiar with the French attitude toward what is called the “Seventh Art.” They will also learn to write creatively about film the way the French “cinéphiles” do, using both technical and analytical perspectives. (Open to students who have completed French 4 (AP), French 4 or with permission from the department.)

### FR6AH

#### French 6: Advanced Studies

(Half Course)

French 6 explores French civilization through its national symbolism and iconic figures. Class time is dedicated to exploring different aspects of French culture in its historical context. Students will work independently on a variety of projects to deepen their knowledge of modern France. Students will complete projects in multiple forms, but the focus is on oral communication in French. (Open to students who have completed at least one semester of French 5, French 5 (Honors) or with special permission from the department.)

# Spanish

SP1

## Spanish 1

This course provides an introduction to Spanish including everyday vocabulary, idiomatic expressions, and essential structures of grammar. Special focus is placed on present and past tense conjugations, pronunciation and the use of pronouns. Students develop competence and confidence in Spanish as they learn to express themselves, writing and speaking in real-life situations. They learn about the Spanish-speaking world through readings, presentations and projects.

SP1P

## Spanish 1P (Prior Study)

This course focuses on developing a solid foundation in essential language skills. It is intended for students who have previously studied Spanish but have not mastered the skills or grammar required for Spanish 2, particularly the past tenses. Considering the students' previous experience with the language, the course allows for a greater depth and variety of activities, such as readings, skits, projects and presentations. Students focus on Spain in Semester 1 and Mexico in Semester 2.

SP2

## Spanish 2

This course is a continuation of the development of essential language skills. It completes the foundation of Spanish grammar, including the indicative, imperative and subjunctive moods. Students hone their skills through a variety of activities: paired and small-group speaking practice, skits, projects and presentations. Through cultural readings and current events, students explore various aspects of life in the Spanish-speaking world.

SP2/3

## Spanish 2/3 (Accelerated)

The goal of Spanish 2/3 is to inspire integrated and creative use of the language. The course takes a contextualized approach to language learning, using authentic content and context as a way to improve and inspire language learning. Students master grammar and vocabulary through readings, discussions and essays on selected topics. Spanish 2/3 also introduces students to the

study of literature through short stories and poetry. The course meets five times per week. Placement is at the discretion of the department and enrollment is normally limited to 12 students. Students who take this course are expected to continue their study of Spanish at level 4. *(Note: Class I students taking this course to complete their foreign language requirement must remain throughout the spring semester.)*

SP3

## Spanish 3

In this course, students review and study grammatical structures in depth, paying careful attention to the more complex aspects of the language through activities and practice. The course takes a contextualized approach to language learning. The units and readings are centered on current, compelling themes. Upon completing this course, students will be able to express themselves not only in everyday situations, but also in social, political and literary discussions. This course introduces the study of art and literature from Spain and Latin America.

SP31

## Spanish 3 (Honors)

This course covers the same content as Spanish 3, but with a more extensive reading list, more frequent writing assignments, and a greater variety of projects. Spanish 3 (Honors) develops critical reading and creative writing skills that prepare students for work in upper level courses. Placement is at the discretion of the department and enrollment is normally limited to 12 students.

SP4CL

## Spanish 4: Topics in Hispanic Culture and Literature: Mexico Yesterday and Today

This course examines Mexican history, literature, art and society from pre-Colombian times to the present. The course considers how the past continues to shape issues related to identity, religion, and sociopolitical structures in contemporary Mexico. Students discuss these themes and advance their mastery of Spanish through primary sources from history, literature and news stories. All units and projects will shape the interdisciplinary, inside look at Mexico yesterday and today.

SP4HN

## Spanish 4 (Honors)

This is an advanced course in Spanish language and an introduction to the formal study of Hispanic literature. The focus of the course is the "Boom" in Latin American literature and the cultural, political and social factors that contributed to it. Students will read, analyze and discuss the works of authors such as Gabriel García Márquez, Carlos Fuentes, Julio Cortázar, Mario Vargas Llosa, and Juan Rulfo. Through the study of these authors, students will gain understanding of their impact on world literature and their influence on Post Boom authors such as Isabel Allende, Ángeles Mastretta, and Laura Esquivel. Students enrolled in this course will be expected to read and write analytically, as well as express themselves at a level appropriate to honors-level study. *(Open to students who have completed Spanish 2/3, Spanish 3, Spanish 3 (Honors) with permission from the department.)*

SP5F

## Spanish 5: Inside Latin America

(Semester 1)

This course will guide students through some of Latin America's most significant historical, political and social changes. These topics will be explored through both literature and film. In this semester course students will examine countries in Central and South America, considering their shared histories and their unique position in the modern world. *(Open to students who have completed Spanish 4, Spanish 4 (Honors) or 5 (Honors).)*

SP5S

## Spanish 5: Discovering El Caribe

(Semester 2)

This course will provide students with a more comprehensive understanding of the culture, history and unique geographic importance of El Caribe. Students will examine the Caribbean islands of Cuba, the Dominican Republic or Puerto Rico through literature, art and film. Students will come to understand the individuality and interconnectedness of the islands of the Caribbean while studying concepts of ethnic, racial, cultural and sexual identity. *(Open to students who have completed Spanish 4, Spanish 4 (Honors), Spanish 5 (Honors) or Spanish 5 fall semester.)*

**SP5HN****Spanish 5 (Honors)**

This course expands on the works and themes of Spanish 4 (Honors). Through a close, contextualized reading of a variety of works by Spanish and Latin American writers, students will improve their analytical skills and expand their global awareness. Students will explore all literary genres and respond to the works with both critical essays and creative projects. Students will explore works and ideas in a cultural, contextual framework appropriate for honors-level study. *(Open to students who have completed Spanish 4, Spanish 4 (Honors), Spanish 5 (fall and/or spring) with permission from the department.)*

**SP6TH****Advanced Topics in Spanish**

*(Half Course)*

This half course provides students an opportunity to develop their language and rhetorical skills while they take a deeper, more self-directed look at renowned texts and relevant topics. This course will be devoted to a close study of a chosen body of literary works. Students will consider these works for their literary and historical significance. Emphasis will be on conversation and essay writing. *(Open to students in Class I or II who have completed Spanish 5 or 5 (Honors), or with permission from the department chair.)*

**Chinese**

With the tremendous economic growth that has taken place in China, the country and its language have become integral to any discussion of the world's future. Milton Academy's Chinese language program gives students access to that discussion by providing the cultural and historical background and linguistic pragmatics to incorporate what they have learned into real life situations.

**CH1****Chinese 1**

This course is an introduction to Mandarin Chinese, the national language of China. The course emphasizes spoken Mandarin and written characters, paying particular attention to the tones and proficiency in handling everyday situations in the language. Reading and listening skills are also introduced so that students can begin to feel comfortable expressing themselves verbally and in writing. By the end of the first year, students will have mastered more than 350 characters.

**CH2****Chinese 2**

Chinese 2 continues to build on the foundation of Chinese 1, presenting additional vocabulary that allows students to handle increasingly complicated situations in the language. Through both writing and speaking, students will master most of the basic grammatical structures of the Chinese language. By the end of the year, students can expect to have mastered around 800 characters.

**CH3****Chinese 3**

Chinese 3 prepares students to handle more complex situations in Mandarin. The length of written work increases as students learn characters and gain confidence. The course also continues to stress listening comprehension and speaking about Chinese culture in the target language. By the end of the year, students can expect to have mastered around 1,250 characters.

**CH4****Chinese 4**

Chinese 4 covers a wide range of topics related to current events, social sciences, and Chinese culture. Students reinforce fluency through written work and oral presentations. By the end of the year, students can expect to have mastered around 1,750 characters.

**CH5****Chinese 5**

Chinese 5 deals with topics related to history, culture and current events. Students will increase their vocabulary by discussing topics in the language, giving oral presentations, and writing summaries and essays about what they have read. Much of this course is content driven, and language becomes the tool rather than the objective.

**CH5HN****Chinese 5 (Honors)**

This honors course is designed for students who already possess native or near-native written and oral Chinese language skills and will explore in depth Chinese language, culture and literature with a focus on contemporary China in the past century. Placement is at the discretion of the department.

**CH6H****Advanced Topics in Chinese**

*(Half Course)*

The teacher will determine course materials based on students' interests and abilities. In the past, topics have included modern short stories, Chinese history and other historical, social and cultural issues. Reading level in Chinese must be sufficient to allow students to read several pages of Chinese in a short period of time. *(Open to students in Class I or II who have completed Chinese 4 or higher, or with permission from the department.)*

# Non-Credit Required Courses

## Introductory Music

MU4GL

### Class IV Glee Club

MU4OR

### Orchestra

MU4JZ

### Jazz Combo

MU4GN

### General Music

#### *Class IV*

Students in Class IV may elect one of four courses to fulfill their requirement in music.

Students may elect to sing in the Class IV Glee Club (two weekly meetings), play in the Orchestra (two weekly meetings), play in the Class IV Jazz Combo (two weekly meetings) or enroll in Class IV General Music (one weekly meeting). All are performance-based classes and graded on a satisfactory/unsatisfactory basis.

Students electing Class IV Glee Club will perform a wide variety of pieces, including Western and non-Western pieces from various historical periods. There will be two major performances a year. Students electing Orchestra will also perform two concerts each year, playing orchestral music from a wide range of historical periods. Class IV Jazz Combo offers an introductory experience in improvisation skills and small-ensemble playing. General Music surveys musical cultures and includes a performance element. Students electing either Orchestra or Jazz Combo typically will have their own instruments and experience in playing them. Please contact Don Dregalla with any questions.

## Introductory Performing Arts

#### *Class IV*

Students explore their creativity in the contexts of movement, speech, role-playing and dramatic imagination. Participation in a range of activities and exercises is aimed at developing focus and concentration, physical fluency, vocal variety, spontaneity, collaborative skills, and the confidence that allows students to take creative risks. This course

meets in a double period each week for a semester and is graded on a satisfactory/unsatisfactory basis. It provides a preview of the Arts Program offerings in the performing arts, which are available in Classes III, II and I.

## Introductory Visual Arts

#### *Class IV*

Projects in drawing, painting, sculpture and design challenge students to develop traditional skills for artistic expression, and to apply their imaginations to creative problem solving and design-thinking. Individual and collaborative projects often include observational and interpretive self-portraits completed using drawing, collage or digital imaging. Students may collaborate on large painted murals interpreting social or cultural issues. Design challenges may include the creation of repetition-of-form sculptures, mask making, or abstract word design compositions. The course meets for a double period each week for one semester, alternating with Performing Arts. It provides a preview of the intensive, full-time Arts Program courses in visual arts, which begin in Class III. This course is graded on a satisfactory/unsatisfactory basis.

## Affective Education

All courses meet once a week and use the familiar Milton format: a small-group discussion facilitated by a faculty member. Common topics for discussion across all four years include identity, respect for self and others, cyber citizenship, and civil discourse. The teaching schedule is purposefully flexible, so that the weekly course meetings can respond to campus issues that need adult-student conversation in groups where the participants are comfortable with one another.

The four-year curriculum begins with the Health course in Class IV, which focuses on physical, mental, and emotional wellness. The Values course, taken in Class III, begins to explore individual identity and personal ethics. The Class II course, Social Awareness, considers how an individual interacts within society and develops knowledge of issues related to race, gender, socioeconomic class and sexual orientation, among others. Finally, Class I students in

Senior Transitions look at the transition from Milton to the world at large, considering how to reconcile the Milton experience with what choices are imminent beyond Milton.

## Current Events/ Public Speaking (CE/PS)

NPSF

### Fall

NPSW

### Winter

NPSS

### Spring

#### *Classes II & III*

Current Events/Public Speaking introduces students to the fundamentals of public speaking and to research and argumentation about issues in the contemporary world. This graded, 10-week course helps students become more knowledgeable about national and international concerns and to be more confident in their ability to speak well. Research, analysis, organized writing, and argumentation skills are refined in this exciting course that is normally taken during the Class III year. Entering Class II students should enroll during their Class II year.

# Physical Education & Athletics

The physical education and athletics department strives to develop physically educated students. In the pursuit of this goal, the department helps students set fitness and activity goals and guides them through the process of attaining those goals. Through courses required for graduation and through direct instruction, we help students to understand their bodies and attain a level of fitness that is healthy and promotes self-esteem and confidence. Our goal is to provide information, in a fun and safe environment, that helps individual students make healthy life choices. Milton expects students to be physically active throughout their educational career.

To facilitate this philosophy, all students in Classes III and IV participate in physical education classes, interscholastic sports or intramural sports in each season. Class I and II students must participate for two of the three seasons. Opportunities exist for learning about athletic training, managing a team, or seeking an independent course in athletics.

To graduate, a student must take a series of physical education classes. These classes have been arranged to best develop the skills and knowledge that is at the core of the physical education department. We believe, as a department, that students should be challenged to think and achieve collaboratively. They should gain a better understanding of their bodies, know the benefits and risks inherent in life/fitness choices, be physically active, and be able to give of themselves for the betterment of others.

Course Requirements:

*Class IV:* Students must successfully complete a Project Adventure course.

*Class III:* Students must successfully complete a Fitness Concepts course.

*Classes I & II:* Students must successfully complete a CPR course (which includes adult, child and infant CPR with AED) or provide valid certification cards by the end of the winter season of their Class I year. Online certifications are not acceptable.

**Class I students are encouraged to complete their two season athletic participation requirement in the fall and winter seasons, as they will not be excused from this requirement for senior projects in the spring.**

The interscholastic athletic program is designed to challenge athletes at a variety of levels in a myriad of sports. The opportunity for excellence, regardless of the domain, is central to the mission of the School. We expect that athletics, whether interscholastic or intramural, will offer the opportunity to work collaboratively, develop skills, and have fun on the field, court, rink, slopes or in the pool. Please see the list below for interscholastic and intramural offerings.

An alternative sports program is available to students who wish to pursue an athletic interest not offered at Milton Academy. To be eligible for consideration, a request must meet the following criteria:

- The program must be in a sport or activity not offered at Milton Academy in any season.
- The proposed enterprise is sufficiently physical to coincide with the School's physical education philosophy.
- The request is for no more than one season per year.

Students wishing to pursue an alternative sports program must submit the request to the athletic department. Deadlines for such requests are May 21 for the following fall season (excluding students who are new to Milton, whose deadline is September 15); October 20 for the following winter season; and February 17 for the following spring season. Applications are available from the athletic department.

Where staffing, student interest and scheduling permit, students can pursue the following activities at Milton. An asterisk (\*) indicates an activity for which the opportunity for interscholastic competition exists. A pound sign (#) indicates an activity for which there is an intramural opportunity. All other offerings are a part of the physical education curriculum.

## Fall

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CPR (Adult, Child, Infant CPR w/ AED)  
Cross-Country\*  
Field Hockey\*  
Fitness Concepts  
Football\*  
Outdoor Education#  
Project Adventure  
R.A.D. Rape Aggression Defense#  
Soccer\*#  
Strength Training and Conditioning#  
Tennis#  
Volleyball\*  
Weight Training  
Yoga#

## Winter

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Alpine Skiing\*  
Basketball\*  
CPR (Adult, Child, Infant CPR w/ AED)  
Fitness Concepts  
Ice Hockey\*  
Outdoor Education#  
Pilates#  
Project Adventure  
Squash\*  
Strength Training and Conditioning#  
Swimming\*  
Weight Training  
Wrestling\*

## Spring

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Baseball\*  
CPR (Adult, Child, Infant CPR w/AED)  
Fitness Concepts  
Golf\*  
Lacrosse\*  
Outdoor Education#  
Project Adventure  
Sailing\*  
Softball\*  
Strength Training and Conditioning#  
Tennis\*  
Track & Field\*  
Ultimate Frisbee#

# Science

Students must take one full-year laboratory course in a physical science (satisfied by a full-year physics or chemistry course), and they must take one full-year laboratory course in biology. The science department strongly recommends that all students take three full-year laboratory courses; one each in physics, chemistry and biology (in this sequence) so that they are well educated in the three major sciences. The department urges this sequence for students planning to take all three because physics will lead to a more thorough understanding of chemistry and both of these will lead to a better understanding of biology. Students taking semester courses and half courses may be in the Class I or II year. In addition, they must have received credit for at least two full-year laboratory courses, or be enrolled in a second full-year laboratory course concurrently with the semester course. Advanced courses in science are open to Class I students who have taken laboratory courses in physics, chemistry and biology.

## SCPF

### Class IV Physics

#### Class IV

In Class IV Physics, students are introduced to the fundamental concepts of physics as well as basic methods of scientific investigation. Many of the exercises and experiments are inquiry-based, which allows students to experience the physics phenomena first hand and learn to draw conclusions from data. Topics covered will include Newton's Laws of Motion, momentum, energy, electricity and magnetism. These topics, taught in combination with fundamental science skills, will prepare Class IV students for higher level science courses. The double-period class meetings allow students to investigate topics in depth with guidance from the instructor, research a topic of interest to them, develop questions, and create an experiment to test their hypotheses. Students culminate their work in Class IV Physics by conducting an independent, self-designed experiment.

## SCPH

### Physics

#### Classes I, II & III

This course covers the breadth of the discipline with an emphasis on qualitative understanding of concepts as well as problem solving. Topics covered in the first semester are kinematics, Newton's Laws of Motion, momentum, energy, circular motion and gravitation, which will culminate in a comprehensive exam. The second semester includes the study of waves, sound, light, electricity, magnetism, and possibly relativity and modern physics. The weekly labs reinforce the concepts discussed in the classroom and stress the procedures of science. Many of these labs use an inquiry approach. Students will complete their Physics experience by conducting a Design-Your-Own experiment in place of an exam. Students who take this course are well prepared to take either chemistry course.

## SCCH

### Chemistry

#### Classes I, II & III

This course helps students understand and apply concepts of chemistry through problem solving, demonstrations and laboratory experiences. Students study the behavior of common elements and their compounds as well as the laws that govern chemical reactions. This course emphasizes both qualitative and quantitative aspects of chemistry as well as observational and organizational skills. Students also explore the connection between chemistry and the environment. As students gain proficiency in the lab and in the inquiry process, they become responsible for the construction of experimental hypotheses and for developing lab procedures. Students will complete the year with an independent lab project of their choosing.

## SCHC

### Chemistry (Honors)

#### Classes I, II & III

Chemistry (Honors) is a quantitative course in which students study the properties and behavior of matter and the laws governing chemical reactions. The course covers the following topics: atomic theory, molecular structure, stoichiometry, gas laws, thermochemistry, oxidation-reduction, electrochemistry, acids and bases, equilibrium systems, kinetics and reaction mechanisms. The laboratory work emphasizes an inquiry process by requiring students to design independent

investigations of open-ended questions and stresses the process involved in scientific research. Both the class work and the laboratory work of this course build on a lab-based physics course. (*Prerequisite: A course in physics and permission of the department.*)

## SCBIO

### Biology

#### Class II or Class I, or permission of the department chair

Biology is the study of life. Designed to follow a course in chemistry, this course will explore the evolutionary and ecological diversity of life through an inquiry-teaching model. Broad themes in Biology include ecology and energetics, cell structure and function, genetics, heredity and molecular biology. As the year progresses, we emphasize connections between broad biological concepts—ecology and human biology, for example.

## SCHB

### Biology (Honors)

#### Class II or Class I, or permission of the department chair

Designed to follow a course in chemistry, this accelerated course will explore molecular, cellular, organismal and ecological biology through an inquiry-teaching model. Broad themes in Biology (Honors) include ecology and energetics, cell structure and function, molecular biology, genetics and heredity. Students will explore the material through class discussions, review of scientific literature and work in the laboratory; they will practice critical thinking and writing as well as designing, conducting and analyzing experiments. There is a substantial out-of-class lab component in Biology (Honors) that students will need to coordinate with their lab partner(s). (*Prerequisite: A course in chemistry and permission of the department.*)

## Advanced Courses in Science

### Class I

The goal of these courses is to give our most capable, motivated science students an opportunity to further explore topics in each individual subject area. These courses include a significant amount of inquiry-based laboratory work. Through these explorations, students will broaden their understanding of the natural world. These

courses may include readings of primary research, other scientific literature and scientific textbooks, along with class discussions and inquiry-based lab work (both independent from and in concert with the instructor).

To register for any of these courses, students must have completed laboratory courses in physics, chemistry and biology and have permission from Ms. Seplaki. Students may take Advanced Physics or Advanced Chemistry concurrently with Biology (Honors) with permission from Ms. Seplaki. If a student chooses to move out of Biology (Honors) for any reason, he or she will be required to drop the Advanced course being taken concurrently. All full-year courses at Milton Academy qualify as laboratory courses. If students have taken courses at other institutions, they should contact Ms. Seplaki, who will determine whether they can receive credit for that work. These classes are designed for our strongest science students, and students need to be academically qualified to keep up with the high level of work. All students in Advanced Courses in Science will be required to present at the end-of-year Science Symposium.

#### SCAB

### Advanced Biology

This course allows students to deepen their understanding of biological concepts and hone their laboratory technique, skills and writing. Much of the work in class will integrate molecular biology techniques to elucidate principles studied. In the first semester students will study cell signaling and prokaryotic gene expression and synthetic biology extensively. In the second semester students will study evolutionary biology. Studying evolution will allow students to integrate all areas of biology with understanding the process and outcome of evolution. Possible explorations include analysis and synthesis of synthetic DNA devices; assay of gene function in bacteria; analysis of mcrI sequence and mitochondrial DNA in the student's genome; tissue regeneration in flatworms; sexual development of c-ferns, and behavior of c. elegans. Students will practice laboratory techniques necessary in the study of the organisms, and they will further their understanding of the concepts

and protocols of molecular biology. Students should enjoy working in the lab and want to push themselves in studying biological sciences. We will use primary scientific articles as models of research and as a means of learning the material.

#### SCAC

### Advanced Chemistry

The goal of this course is to provide students with the knowledge and skills to investigate chemistry as it relates to their own scientific interests. Students will be introduced to several pieces of advanced laboratory equipment and will more deeply study technology used in previous classes. Mini "DYO" labs are incorporated into the class every six to eight weeks to enable students to design and execute projects that apply the skills we have mastered to areas of personal interest in science. Topics of study include qualitative and quantitative analysis, kinetics, equilibrium, and electrochemistry, as well as more innovative fields such as nanotechnology, polymers, and molecular gastronomy. Assessment in this class is laboratory based and includes a wide range of reporting formats, as well as creative projects. A successful student must be able to work well independently and in close partnerships; demonstrate a strong commitment to safe lab work; and be willing to take intellectual risks in pursuit of creative research.

#### SCAE

### Advanced Environmental Science

This course will combine students' physics, chemistry and biology background with new material from Earth and atmospheric science to tackle issues of human-influenced environmental change. Our focus will be on understanding how nature works and on finding solutions to real environmental problems. This class begins with an overview of Earth's systems (atmosphere, oceans, geology and ecology). We will then turn to ways in which humans have perturbed those systems. Common topics of environmental science include climate change, ozone depletion, declines in biodiversity, damage to particular ecosystems (forests, estuaries, coral reefs, etc.), air and water pollution, energy efficiency and renewable energy, wild species and conservation. Lab work will be heavily weighted toward fieldwork. Our proximity to the Blue Hills, the Neponset River Estuary (the only remaining salt marsh estuary in Boston Harbor), and numerous local wetlands and streams provide an unusually rich

natural laboratory for our work. Students should be excited about frequent outdoor fieldwork. Students should have completed physics, chemistry and biology to enroll in this class or have special permission from Ms. Seplaki and the instructor of the course.

#### SCAP

### Advanced Physics

In this course, students study the physical laws that govern the universe. The class has two components: laboratory work and problem solving. Students will complete weekly problem sets online and weekly lab practicals, designed to allow students to demonstrate what they have learned in a concrete fashion (for example, predicting where a ball shot from a launcher will land). The fall semester is devoted to mechanics (Newton's Laws of Motion, the Conservation of Momentum and Energy, et al.) and the spring semester is devoted to electricity and magnetism, including electromagnetic induction and Gauss' law. Students will also work on three long-term labs each semester. We will make use of the calculus that students have learned to explore the laws of physics more thoroughly.

## Semester & Half Course Electives

### Classes I & II

Students must have credit for two full-year laboratory science courses, or previous credit for one full-year laboratory science course and an additional full-year laboratory course taken concurrently with the elective semester or half courses. Students should be aware that if a required concurrent full-year course is dropped for any reason, the elective course(s) will also have to be dropped.

#### SCASF

### Observational Astronomy

(Semester 1)

In this course we study all things astronomical, from the life and death of stars to the evolution of the universe, from the solar system to the history of astronomy. Students conduct semester-long projects of their own choosing in consultation with the instructor. In the past, students have observed variable stars, sunspots, the moons of Jupiter, and the setting position of the sun. In the weekly

observing sessions, students locate objects discussed in lectures using the Robert C. Ayer double-domed observatory that is equipped with permanently mounted 9- and 12-inch reflecting telescopes as well as several portable telescopes. Students also take pictures of celestial objects using the special cameras provided.

#### SCEFH

### Engineering the Future

*(Half Course)*

This course introduces students to concepts in engineering, beginning with investigations into structures and the basics of structural analysis. Students will build various structures and then test them in our ADAMET load-testing machine to experimentally verify the concepts of stress, strain, shear and moment. Using this knowledge, students will build skyscrapers as tall and thin (proportionally) as the tallest buildings in the world, then turn them horizontally to test whether they remain in one piece. This tower/cantilever project is followed by a theoretical investigation of how materials fail and an overview of other types of engineering. We conclude with team and individual projects where students evaluate a concept and design improvements.

#### SCGH

### Geology

*(Half Course)*

Have you ever wondered why Earth is shaped the way it is? Why are there mountains, volcanoes, canyons and coastlines? How have these features been shaped over time? This course is designed to illuminate these questions by giving students a broad understanding of Earth's many landscapes and the knowledge to interpret Earth's history through observations of those landscapes. The course begins with a study of the major rock types and the processes of volcanism, mountain building, weathering and erosion that lead to the landscapes we see today. We continue with studies of glaciers, earthquakes, landslides, faults and coastal processes. The theory of plate tectonics unifies many of these topics and is a major component of the course. The School's proximity to the Blue Hills allows for fieldwork opportunities that will permit students to practice the science of geology.

#### SCMAH

### Science in the Modern Age

*(Half Course)*

The need for students to be scientifically literate and able to detect bias in the media is critical. Students must not only be informed of current science topics, but they must also be able to critically examine issues at hand. Through a seminar-style format, Class I and II students will be encouraged to examine their basic assumptions about science and will investigate the interplay between science and society. Students may interact with the greater scientific community in a variety of ways, including interviews, guest speakers, and a field trip. Using multimodal assessment, students' learning will be measured by discussions, reading responses, debates, persuasive and journalistic writing, journaling, presentations, projects and laboratory experiences. With citizens and future voters in mind, this course promotes scientific literacy, critical analysis and good decision-making. Topics could include, but will not be limited to, bioethics, epidemiology, DNA technology, genes and health, forensic science, sustainability, pharmacology, biodiversity, reproductive technology, and medical dilemmas. Students will read current science publications as their primary resource.

#### SCMBF

#### SCMSB

### Marine Science

*(Semester 1 or Semester 2)*

This course investigates the biology, ecology and adaptations of marine life, as well as the most recent research in the fields of oceanography. The course will emphasize independent and small-group lab work, research and presentations. Major topics studied will be fundamental oceanography, the fundamental concepts of biology that relate to the marine environment, a survey of marine life, and issues in marine biology, conservation and oceanography. Lab work is an important component of Marine Science. Students will work in the lab every week as they explore the concepts of the course. Additional assignments require students to take advantage of the resources available in Boston, such as the New England Aquarium, lectures at local universities, and visits to local habitats. Lab work includes comparative anatomy done through dissection and direct observation of live, preserved and fossil plants and animals.

#### SCANF

#### SCANS

### Human Anatomy and Physiology

*(Semester 1 or Semester 2)*

Human Anatomy and Physiology challenges students with a variety of approaches geared toward developing a strong fundamental understanding of the structure and functioning of the human body. Classroom discussions emphasize physiological concepts, with special attention to the anatomical features of the system being studied. The course begins with an overview of cellular anatomy and physiology. The systems addressed over the course of the semester typically include the skeletomuscular system, cardiovascular system, lymphatic system, respiratory system, endocrine system and excretory system. Other body systems are touched upon in the context of discussions of the previously mentioned systems. Evaluation for the class is based on participation in class discussions and in group work, in-class and take-home assessments, dissections, and one or two in-class presentations.

#### SCMGTF

### Molecular Genetics 1

*(Semester 1)*

This course educates students about the science and technology of the field of molecular genetics. Students briefly review the basic structure and function of DNA. For the first half of the semester students will isolate, amplify and sequence their TASR38 gene. Students will determine their haplotype and correlate it with their ability to taste a bitter tasting chemical. Students then complete a set of cloning and sequencing protocols of a plant housekeeping gene. After completion of these protocols, students will have the fundamental skills necessary to clone and sequence a gene in the laboratory. Skills developed in the course include nucleic acid extraction, performance and analysis of nested polymerase chain reaction (PCR), electrophoresis, size exclusion chromatography, DNA ligation and bacterial transformation, microbial culturing, and sequencing and bioinformatics. The majority of the work in this class is laboratory-based. *(Prerequisite: A course in biology.)*

**SCNPF****Nuclear Physics***(Semester 1)*

This course introduces students to fundamental principles of nuclear physics and their applications in the modern world. We first cover the composition and structure of the nucleus, radioactivity, radioactive decay, and then common nuclear reactions and the energy relationships that drive them. These concepts serve as a foundation for understanding such diverse topics as the radon health hazard, radiometric dating, nuclear weapons (design and proliferation), modern medical imaging and therapeutic techniques and commercial nuclear reactors. Finally, we return to basic science to ask one of the most fundamental questions of all: Where does stuff come from? We will answer this by exploring the processes of nucleosynthesis in stars, which is how all elements beyond helium are created. *(Prerequisites: A course in both physics and chemistry.)*

**SCCOS****Cosmology and Modern Physics***(Semester 2)*

Discoveries made during the last 60 years in physics have radically changed our view of the universe. Astronomers and physicists use their understanding of the very small structures of matter, such as quarks, to explain the very large structures, such as the distribution of galaxies in the universe. In this course, students learn about the wave-particle duality of matter, the quark model of matter, elementary particle discovery and classification, the grand unification of forces, the Big Bang theory, black holes, and the end of the universe. *(Prerequisites: A course in both physics and chemistry.)*

**SCENS****Issues in Environmental Science: Challenges for the Twenty-first Century***(Semester 2)*

This class addresses the major environmental challenges that face the world in the 21st century. Perhaps the most pressing global issue is that of climate change, and this course will address the science and politics of climate in some detail. Inextricably linked to climate change is the way in which

humanity uses energy. Thus, this course will also address fossil fuel use, nuclear power and renewable energy with its associated emerging technologies (wind, solar, geothermal, hydrogen, tidal). We will also address the concept of sustainability in its environmental-science context. If time permits, the course will touch on issues of human population growth, biodiversity loss, air and water pollution, over-fishing, and other sustainability topics of student interest. Students will be encouraged to participate in the ongoing efforts to make Milton Academy more sustainable. *(Prerequisite: A course in both physics and chemistry.)*

**SCMG2S****Molecular Genetics 2***(Semester 2)*

This course is designed to follow Molecular Genetics I. Using the fundamental laboratory and analytical skills developed in their first semester, students will engage in class-designed and student-designed molecular biology research projects. These will require a good understanding of molecular biology and of laboratory techniques. Some projects may facilitate connections with the greater scientific community. Students should be interested in working on long-term projects and working in the laboratory. Students will be required to present their work at the Science Symposium at the end of the semester. *(Prerequisite: A course in biology AND Molecular Genetics 1.)*

**SCOC1F****Organic Chemistry 1***(Semester 1)*

Enter the world of medicines and plastics, of skunk spray and gasoline, of steroids and sugars. Enter the world of organic chemistry—the chemistry of carbon! This challenging course will focus on the fundamentals of organic chemistry and will include an introduction to molecular structure, stereochemistry, and the mechanisms of synthesis reactions. These fundamental ideas will be exemplified in discussions revolving around relevant synthetic molecules as well as important, naturally occurring biological entities. To deepen their understanding of the course material, students will be expected to participate in, and ultimately drive, laboratory experiments exploiting an inquiry-based learning approach. In total, knowledge gained from this class will equip the students with the critical rudiments in organic chemistry, a common collegiate requirement

for science and engineering, pre-medicine, pre-dentistry, and pre-pharmacy majors. *(Prerequisite: a course in chemistry and biology; biology may be taken concurrently.)*

**SCOC2S****Organic Chemistry 2***(Semester 2)*

This course is designed to follow Organic Chemistry 1. This installment will cover new and exciting synthetic reactions and mechanisms and will also introduce the analytical techniques of infrared and nuclear magnetic resonance spectroscopy. These tools will increase the breadth of the projects students will encounter, both at the Harkness table and in the laboratory. *(Prerequisite: A course in chemistry and biology; biology may be taken concurrently. Students must also have completed Organic Chemistry 1.)*

**SCFFH****Futurology: Science Fiction to Science Fact***(Half Course)*

Science fiction often predicts scientific and technological advances years before they exist: tablets, earbuds, virtual reality, persistent surveillance, cybercrime, cloning, climate change and human space travel were all described decades before they were observed. Futurology uses science fiction as a structure to investigate emerging science and technology, debate ethical issues raised, and imagine how science and technology could evolve in the future—for good or for bad.

Themes of this class include Machines (robots/androids/cyborgs, AI, virtual reality, the singularity and cybercrime), Humans (genetic engineering, cloning, xenotransplants, drugs and zombies), Aliens (space and time travel, evolution, aliens and religion in science) and The End (climate change, meteors, solar flares, volcanos, nuclear war, and technology's revenge) with room left for topics of special interest to students. The curriculum combines novels and short stories with current scientific research, field trips, podcasts, TED talks, movies, and television. Grades are based on online and in-class discussion and projects.

## SCNEU

### Neuroscience

We will begin this course by venturing into the scientific study of the brain with a focus on the anatomical structures of the brain and their functions. We will follow with in-depth exploration of neuronal communication. We will explore concepts in sensation, neuroplasticity, learning and memory. As we finish the course, these topics will be applied to investigation of mental health disorders and neurodegenerative diseases. A few relevant dissections and labs will be performed. As this is an ever changing field, students will learn to read and investigate scientific literature in the latter part of the course to understand the most recent theories and latest pharmacological interventions for what we study. *(Prerequisite: A course in biology.)*

## SCADH

### Introduction to Aerodynamics

*(Half Course)*

In this course students will explore what makes airplanes work: from lift, thrust and drag to control surfaces, stalls and spins. We will cover the conceptual framework for flight as well as the theoretical basis for unconventional aircraft like the Piaggio Avanti and Burt Rutan's canard aircraft. Students will build wing-in-ground effect models to explore the difference between pressure and lift and work toward a major project in the spring: designing a 21st-century ERCoupe, an airplane with simplified controls meant to appeal to a wider flying market. Students will evaluate their design ideas by building a flying model of their aircraft.

## Half Courses

The following half courses meet **all year long**, but with fewer meetings and/or less required preparation per week than a full course.

Classics	Classes	Page
Advanced Latin: Roman History	I–II	10
Advanced Latin: Roman Elegy and Lyric	I–II	10
Advanced Classics: Ancient Greek 2A	I–II	11
Advanced Classics: Ancient Greek 2B	I–II	11
<b>Computer Programming</b>		
Computer Programming 1–4	I–III	20–21
<b>English</b>		
Advanced Creative Writing	I–II	14
Advanced Creative Writing 2	I	14
Hamlet	I–II	13
Project Story	I–II	14
<b>History &amp; Social Science</b>		
History of Civil Rights	I–II	16
Justice in a Digital World	I–III	17
Topics in Psychology	I–II	17
<b>Modern Languages</b>		
French 6: Advanced Studies	I–II	22
Advanced Topics in Chinese	I–II	24
Advanced Topics in Spanish	I–II	24
<b>Music</b>		
Advanced Jazz	I–II	4
Chamber Singers	I–III	3
History of Music	I–III	3
Music Theory	I–III	3
Orchestra/Chamber Orchestra	I–III	3
<b>Performing Arts</b>		
Advanced Dance: Modern	I–III	4
Advanced Dance: Ballet	I–III	4
Advanced Dance: Choreography	I–III	4
Advanced Drama: Improvisation	I–II	5
Advanced Drama: Costume Design	I–II	5
Hamlet	I–II	13
Project Story	I–II	5
Spoken Word Poetry	I–III	5
<b>Science</b>		
Engineering the Future	I–II	29
Geology	I–II	29
Science in the Modern Age	I–II	29
Futurology	I–II	30
Intro to Aerodynamics	I–II	31
<b>Visual Arts</b>		
Advanced Filmmaking	I–II	8
Advanced Documentary Film	I–II	8

## Semester Courses

The following semester courses meet four times per week for **half the year**.

Classics	Semester	Classes	Page
Advanced Latin: Roman Philosophical Writings	1	I–II	10
Advanced Latin: Selected Readings	2	I–II	10
<b>History &amp; Social Sciences</b>			
African-American History	1	I	15
American Government and Politics (AP)	1	I–II	16
History of the Middle East	1	I	16
History of Modern China	1	I	15
Religions of the Middle East	1	I–II	17
Principles of Economics	1 & 2	I–II	17
Behavioral Economics	2	I–II	17
Comparative Government (AP)	2	I–II	16
Asian American History	2	I	16
Globalization and Islam	2	I	16
Religions of Asia	2	I–II	17
Topics in Global Economics	2	I–II	17
Topics in Modern World History	2	I	16
<b>Math</b>			
Advanced Topics in Math	1&2	I–II	20
<b>Modern Languages</b>			
The Francophone World	1	I–II	22
Twentieth-Century France Through Its Cinema	2	I–II	22
Inside Latin America	1	I–II	23
Discovering El Caribe	2	I–II	23
<b>Science</b>			
Human Anatomy and Physiology	1&2	I–II	29
Marine Science	1&2	I–II	29
Molecular Genetics 1	1	I–II	29
Nuclear Physics	1	I–II	30
Observational Astronomy	1	I–II	28
Organic Chemistry 1	1	I–II	30
Cosmology and Modern Physics	2	I–II	30
Issues in Environmental Science	2	I–II	30
Molecular Genetics 2	2	I–II	30
Organic Chemistry 2	2	I–II	30
<b>Visual Arts</b>			
Advanced Drawing	1	I–II	7
Advanced Photography: Digital Imaging	1	I–II	7
Advanced Sculpture	1	I–II	7
Advanced Technology and Media	1	I–II	7
Advanced Portfolio: Drawing Painting	1	I	8
Advanced Portfolio: Sculpture Ceramics	1	I	8
Advanced Portfolio: Photography Digital Imaging	1	I	8
Advanced Portfolio: Filmmaking	1	I	8
Advanced Ceramics	2	I–II	8
Advanced Painting	2	I–II	7
Advanced Printmaking	2	I–II	7
Advanced Photography: Alternative Processes	2	I–II	7
Advanced Technology and 3-D Design	2	I–II	8
Advanced Portfolio: Independent Studio Seminar	2	I	8
<b>Performing Arts</b>			
Advanced Drama: Acting Styles	1	I–II	5
Advanced Drama: Musical Theatre	2	I–II	5

