

# MILLBROOK SCHOOL



## 2011-2012 Course Offerings

### General Academic Policies

*To qualify for a Millbrook School diploma, a student must meet the following requirements:*

<b>English</b>	- four years.
<b>Mathematics</b>	- three years (Algebra I and II, geometry).
<b>Languages</b>	- three years of one language.
<b>Science</b>	- two laboratory sciences, including biology
<b>History</b>	- one year of U.S. History is a graduation requirement; U.S. History at Millbrook requires submission of a research paper; fourth formers take Modern World History and third formers take Ancient History.
<b>Arts</b>	- one year course
<b>Human Development</b>	- full-year course for all fourth formers meets the New York State Health requirement.

**All students are required to take a minimum of five and a maximum of six courses each semester.**

**All Students must complete a minimum of 20 credits.**

### Advanced Placement

The Millbrook School curriculum is designed to challenge students at every level of their academic experience and, as such, features course offerings at the introductory, intermediate, and honors and advanced levels. In selected subject areas, students may choose from Advanced Placement courses that will permit them to enter college with advanced standing. Advanced Placement courses are year-long courses; advanced standing is awarded based upon the results of three-hour exams administered in May. The grading scale for the AP is 1-5, and in the last five years, nearly 60% of Millbrook students who sat for these exams have scored 3 or above. At Millbrook, the AP is offered in English Language and Literature, and Spanish Language and Literature, and Calculus AB and BC.

### Culminating Experience for Seniors

All seniors at Millbrook are required to complete a Culminating Experience during their senior year. The purpose of this program is to provide our seniors with an opportunity to develop their intellectual independence in a particular discipline or disciplines by engaging in an authentic intellectual project as part of the culmination of their academic career at Millbrook. Seniors are

required to present their findings in a formal presentation to members of the Millbrook community.

At the beginning of their senior year, seniors select the academic discipline in which they will pursue their culminating experience. Each senior then submits the essential question he or she plans to investigate to the relevant academic department for approval or revision. Once the question has been approved, each student is required to spend a minimum of fifteen hours researching, developing and refining the project over the course of the year. The project culminates in the student's formal public presentation of his or her project to a panel of faculty evaluators and peers.

### **Independent Study**

Independent study is a semester long or year long directed course of study, through which a sixth former and, occasionally, a fifth former may investigate topics of particular interest to him or her, topics that may not be covered fully within Millbrook's academic program. Normally, the pursuit of independent study is carried on after a student has exhausted the course offerings within the academic program, or in conjunction with a student's work in an honors or advanced course. In order to secure approval for independent study, a student must obtain sponsorship of a member of the faculty and, with him or her, submit a draft proposal for the course of study to the dean of faculty for review. The proposal should be submitted by May before the fall semester in which the study is to begin, or by December for the spring semester. A course of independent study is subject to the dean of faculty's and the academic department chair's approval.

Any student seeking approval for an independent study must have maintained honor roll status for the semester preceding the independent, and must maintain honor roll status for the duration of the independent study.

### **Human Development**

Millbrook School inaugurated a Human Development Curriculum, beginning with the fourth form in the fall of 2000. The goal of such a curriculum, broadly stated, is a) to foster cooperation, communication, and respect for individual differences throughout the community and b) to help each student to accomplish the developmental tasks of adolescence, that is, identity, wellness, core values, and decision-making. The aim is to help students make better choices in the areas of goal-setting, time management, relationships, anger management, sexuality, drug and alcohol use. The fourth form will meet twice weekly for regularly scheduled Human Development classes during the academic day. The first class of the week will be a lecture to the entire form, the second, a discussion meeting in sections of twenty students each.

## **ENGLISH**

**English III** at Millbrook refreshes students' skills in reading, writing, vocabulary, and grammar and prepares them for the rigors of the English curriculum. Students begin the year writing reflective and creative pieces and, as the year progresses, begin to hone their analytical abilities through close textual readings and evidence-based writing. In the classroom, the emphasis is on developing the IIIrd form English student's role as participant, resource, and self-advocate. Recent texts include *The Odyssey*, *Parallel Myths*, *Life of Pi*, *Stand Before Your God*, *Things Fall Apart*, *The Catcher in the Rye*, *Romeo and Juliet*, and *The Things They Carried*. In addition, the class uses *Vocabulary Energizers I* throughout the year, which we supplement with an in-house grammar program based on this vocabulary text.

**English IV** introduces students to the major genres in literature: short story, poetry, and drama. Students also develop the vocabulary and the capacity for critical thinking and expression necessary to study each genre effectively. Central to both enterprises is the use of X.J. Kennedy's *Literature*, which includes a wide variety of classic and contemporary works. Students engage the literature actively through analytical and creative writing, and classmates study the creative work of their peers along with that of published writers. In addition, the class uses *Vocabulary Energizers, Book II* throughout the year, which we supplement with an in-house grammar program based on this vocabulary text.

Like English IV, **English IVH** introduces students to the major genres in literature, but at a more ambitious pace. We cover short stories, the novel, poetry, and drama. Students also develop the vocabulary and the capacity for critical thinking and expression necessary to study each genre effectively. Central to both enterprises is the use of X.J. Kennedy's *Literature*, which offers a wide variety of classic and contemporary works. In addition, students read several novels, including John Irving's *A Prayer for Owen Meany*. Students are expected to engage the literature actively through analytical and creative writing, and classmates study the creative work of their peers along with that of published writers. In addition, the class uses *Vocabulary Energizers, Book II* throughout the year, which we supplement with an in-house grammar program based on this vocabulary text.

**Analytical and Creative Writing** is designed primarily for **Vth Form students who are new to Millbrook**, and it introduces them to the wide range of critical reading and writing skills that are required for success across the school's upper-level curriculum. Students will learn how to engage texts actively and responsibly, and they will also be expected to develop the capacity to communicate their ideas effectively and clearly, whether in writing or in class discussions. The central text is Trimmer's *Writing with a Purpose*, which we supplement with a variety of reading assignments, fiction and non-fiction.

**English V** is a full-year course focusing on the theme of "The American Journey." The course gives students a sense of American history through readings and literature from the 17th through the 20th centuries, and as such it corresponds at several key points throughout the year with the historical period that students are exploring in their U.S. History class. Analytical writing in Vth form English emphasizes the development of a strong thesis and supporting arguments. Recent texts include *The Scarlet Letter*, *Middle Passage*, *Ragtime*, *The Great Gatsby*, *A Streetcar Named Desire*, *Death of a Salesman*, *A Raisin in the Sun*, *The Heidi Chronicles*, and *One Flew over the Cuckoo's Nest*.

**English VH** is a full-year course focusing on the theme of the "American Dream" in literature. The course starts with readings and literature from the 17th century and moves up to American drama from the 20th century. There is a heavy emphasis on close reading and analytical writing. English VH asks students to support their arguments—both in their writing and in class discussion—with quotations from the reading. Recent texts include *The Scarlet Letter*, *Ragtime*, *The Great Gatsby*, *A Streetcar Named Desire*, *Death of a Salesman*, *A Raisin in the Sun*, as well as essays by Henry David Thoreau and Ralph Waldo Emerson and a selection of American poetry. Some students in English VH may elect to take the AP Examination in English Language.

**English VI** focuses on continued development of the skills of close, critical reading and strong analytical writing while exploring some overriding themes in contemporary literature and culture: science and ethics; race and justice; and the triumph of the human spirit. We cover such works as *Never Let Me Go*, *Brave New World*, *Frankenstein*, *Beloved*, and *The Handmaid's Tale*. Critical writing is stressed throughout the course. In addition to regular short analytical responses

to the material, students write several comprehensive critical essays each semester, and there is a major research project in the winter. The first semester also features a personal narrative designed to meet the requirements of a college essay.

**AP English** is a full year, college-level literature course, which is offered to V11th form students who have been recommended by their Vth form English teachers. While the course does prepare students for taking the skills-oriented Advanced Placement Examination in English Literature and Composition, its fundamental goal is to help students develop the capacity for independent and original thought by means of comprehensive reading, active discussion, and polished forms of expression. The first semester is devoted to a systematic study of British literature from the Elizabethan era to the Romantic era. Among the major works covered are *Hamlet*, *Henry IV, Part One*, *The Merchant of Venice*, *The Tempest*, *Wuthering Heights*, *Jane Eyre*, *Pride and Prejudice*, and *The Importance of Being Earnest*. We also read shorter pieces – both prose and poetry – by Shakespeare, Donne, Swift, Pope, Blake, Wordsworth, and Keats. As the year progresses, students focus on modern world literature, examining such works as *Crime and Punishment*, *The Metamorphosis*, *The Stranger*, and *J.B.* in addition to poems by T.S. Eliot and short stories by James Joyce.

**English Elective: Playwriting** (can be requested in addition to the required form appropriate courses as described above). See full course description under Arts.

**English as a Foreign Language Writing Seminar** - See World Language Department course descriptions.

## MATHEMATICS

### Algebra I

The first course in mathematics is a study of Algebra I together with an introduction to probability. Its emphasis is on understanding, modeling, and visualizing rather than on the rote learning of procedures. This course will do all that it can to ensure that math makes sense.

### Geometry: Honors and Regular

Geometry is offered at two levels. The regular geometry course, while it includes a modicum of proof, focuses primarily on intuitive geometry and problem solving. Geometry Honors includes intuitive geometry and problem solving, but puts its emphasis on logical structures and proof. *Admission to Geometry Honors is by invitation of the department.*

### Algebra II: Honors and Regular

Algebra II is offered on two levels. Algebra II begins with an extensive review of Algebra I, then covers the usual Algebra II topics with a heavy emphasis on problem solving. Algebra II H assumes a good command of the ideas of Algebra I; extends those ideas through such topics as sequences and series, functions, logs, binomial theorem, and probability; and ends with a strong treatment of trigonometric functions. *Admission to Algebra II Honors is by invitation of the department.*

### Statistics

Statistics focuses on the gathering, organizing, and analyzing of data. Students will learn different ways of organizing and displaying data, probability, how to compare samples to populations as well as how to compare two samples to determine whether or not they are significantly different. Students will also learn how to read articles supported by statistical evidence with a critical eye.

This is a course for students who wish to pursue math beyond the school's minimum requirements. *Prerequisite: completion of math courses through Algebra II. Students may choose to take this class in addition to another math class such as Pre-Calculus or Calculus.*

### **Pre-Calculus: Honors and Regular**

The central matter of Pre-Calculus is the deepening and extending of the student's understanding of functions and their graphs. Pre-Calculus, or its equivalent, is a prerequisite for Calculus at Millbrook and is the appropriate choice to prepare for calculus in the freshman year in college. *Admission to Pre-Calculus is by invitation of the department.*

### **AP Calculus AB; AP Calculus BC**

There are Advanced Placement courses for students ready for college level work in mathematics. For those who complete AP Calculus AB in the fifth form with an AP exam grade of 3 or better, AP Calculus BC is offered.

The advanced placement courses will follow the rigorous AP curriculum. The AB course will explore in depth limits, derivatives, integrals and their applications. The BC course will expand on these topics and will also explore sequences and series. Students will build theorems from basic principles, and analyze the theory behind the mathematics. Students are expected to have a strong background in algebra, a solid understanding of pre-calculus concepts including trigonometry, and a desire to work with abstract ideas. All students are required to take the Advanced Placement exam in the spring. *As with all advanced courses, admission to AP Calculus AB and BC is by invitation of the department.*

### **Calculus**

Calculus will cover the basic ideas of calculus — limits, derivatives and integrals — with less of an emphasis on proof and more of an emphasis on conceptual understanding and problem solving. By the end of the year, students will have a strong understanding of basic calculus, and will be prepared to take a college-level calculus course. *In order to enroll in Calculus, students must have successfully completed a year-long course in Pre-Calculus.*

## **WORLD LANGUAGE DEPARTMENT**

Our goal is for students to reach the proficiency level of Intermediate High during their language studies at Millbrook. Students must continue their language studies through their V Form year in order to attempt to reach the proficiency goal set by the department. Students who achieve the Intermediate High level of proficiency in reading, writing, listening and speaking will graduate with skills needed to become a 21<sup>st</sup> century learner and a global citizen.

The department endorses the Advanced Placement program in French and Spanish, and we will encourage students to reach the Advanced Low proficiency level in order to join the AP class. We also encourage students to spend time in Spanish, French and Chinese speaking countries and communities or in approved language immersion programs.

Millbrook promotes student language proficiency through a curriculum that emphasizes authentic language use. We have state-of-the-art technology in the newly renovated Harris Kenan Language Center. Students enter the building through one of two lounges with flat screen televisions tuned to current news and programming in Mandarin, Spanish, and French. We dedicate time to teaching and learning languages and culture through authentic audio and video materials delivered to our students through the latest SmartBoard technology in our Madrid and

Paris classrooms. Students use our digital laboratory in the language center in order to practice their language skills, and they continue that practice by accessing oral and listening activities that teachers post via websites.

All students new to Millbrook take a placement exam and if this exam is not on file at the start of the first semester, the student will sit for this exam immediately upon arrival. All students will be appropriately placed by the end of the second week of classes. We encourage all new students to ask their previous language teacher to submit a placement recommendation on their behalf. The recommendation forms will be mailed with the placement exam and are used to help us place students appropriately.

Course descriptions for the World Language Department are based on ACTFL (American Council on the Teaching of Foreign Languages) guidelines, with the exception of Latin. Each description is a representative, not an exhaustive, sample of a particular range of ability and each level subsumes all previous levels moving from simple to complex in an ‘all-before-and-more’ fashion.

### **Level I (Novice High)**

By the end of this course, students will be able to respond to simple questions and to communicate basic information in both speech and writing. They will be able to recombine familiar words and expressions to describe self, family, daily activities, personal preferences and basic cultural information. They will be able to navigate with some success in day-to-day survival situations and will be able to read for instructional and directional purposes.

### **Level II (Intermediate Low)**

In this course, students will begin to handle interactive, task-oriented social situations in both speech and writing. They will create sentences and questions with the language in order to handle such basic survival situations as ordering food and making simple purchases. Students will also participate in direct conversations about themselves their daily activities, and their language’s culture. Additionally, they will hone their listening skills and will be able to transcribe and take notes from auditory sources. They will write short paragraphs, electronic messages, and postcards with good control of basic structures. Students will be able to read and understand passages based on personal and social needs, i.e., public service announcements. Students will generally be understood by sympathetic interlocutors, particularly by those accustomed to dealing with non-native speakers.

**Level III (Intermediate Mid).** Students in this course continue to focus on personal interests in their speaking, writing, reading, and listening. They will respond with partial control to direct questions or requests for information; however, their speech may contain pauses, inaccuracies, and misunderstandings. They will begin to self-correct with some success. Students will also explore the world through news and cultural sources; however, they may have difficulty with authentic sources, especially auditory. Students will be able to read basic cultural texts and be able to summarize information from these sources. Students will be able to write in a variety of practical forms such as formal and informal letters and emails although most topics will be based on personal experience. Students will be understood by a sympathetic native speaker used to dealing with non-native speakers.

### **Level IV (Intermediate High)**

Students in this course will be able to converse successfully in the majority of basic situations and in some advanced topics. Hesitation and errors may be present in the delivery of advanced discourse as students depart the world that revolves around them and take on a more global

perspective. They will be able to initiate, sustain and conclude a conversation even though there may be errors. They will connect ideas in order to narrate and describe. Students will be able to understand and determine main ideas in advanced narrative and descriptive texts, both cultural and literary, although they may need to read these texts multiple times. There may be occasional hesitation in their delivery. In general, native speakers will be able to understand students without the need for repetition.

#### **Level V (Advanced Low – Pre AP)**

Students continue to explore global themes and challenges. In this context, students will be able to understand the main ideas and implications on a variety of topics that cover various time frames. Students will be able to read and understand the main idea and the majority of details in news articles, commercial prose, and technical material meant for the general reader, short stories, and abridged or brief works of literature. Students may have some hesitation when tackling a topic for the first time; however, they will be able to both decipher and create meaning by using diverse linguistic strategies. Students will also have sufficient accuracy, clarity, and precision in both written and oral work. They may need to repeat and restate their thoughts to be clear; however, students at this level will be understood by native speakers unaccustomed to dealing with non-native speakers.

#### **AP (Advanced Mid - High)**

This course combines language development with critical thinking. Students will concentrate on interpersonal and presentational spoken and written communication based upon their ability to analyze and interpret information heard and read. Students will be able to identify and summarize main points and important details and make appropriate inferences and predictions from advanced and authentic texts and auditory stimuli. Students will be able to participate actively in both formal and informal conversations on a variety of topics that range from personal interests to public interests while maintaining appropriate cultural register. Their vocabulary will be very good but might contain occasional interference from their native language. They will be able to circumlocute and to rephrase both in writing and speaking. They will have control of both simple and complex structures with few errors. They will be readily understood by native speakers unaccustomed to dealing with non-native speakers. They may have trouble providing a structured argument in extended discourse although will likely be successful in stating opinions or citing conditions.

#### **Mandarin I - Novice Mid**

Mandarin I will introduce students to the fundamentals of the Chinese language with an approach that integrates the four skills of listening, speaking, writing and reading simple texts. When speaking, first year Mandarin students will be able use memorized words and phrases to communicate to describe self, family, home, daily activities, interests and personal preferences. They will be able provide short answers to some basic questions. In writing, they will copy familiar words and produce some from memory. They will begin to write with some accuracy the necessary words to describe their autobiographical information and other short phrases and simple lists.

#### **Mandarin II – Novice High**

Mandarin II builds on the foundation of the vocabulary and grammatical patterns learned in Mandarin I. Students will be able to handle a variety of tasks pertaining to the Intermediate level such as more complex sentence structures, a deeper understanding of the structure of Chinese characters, phrases and vocabulary pertinent to travel, and expressions appropriate to social situations; however, they may not be able to sustain performance at that level. They will be able to respond to simple, direct questions when asked to do so.

### **Mandarin III – Intermediate Low**

Mandarin III will continue to build on the foundation of the Chinese language by integrating reading, writing, speaking and listening. Although students at this level are primarily reactive and may be able to answer direct questions with some success, they are also able to ask appropriate questions. They will be able to conduct themselves successfully in a limited number of uncomplicated communicative tasks, such as describing self and family, daily activities and personal preferences. They can generally be understood by sympathetic interlocutors, particularly by those accustomed to dealing with non-natives.

### **Transition to American Culture and Academic English**

This course is designed to support new non-native users of English in the first months of their transition to American boarding school life at Millbrook School. At the dean's request, a student may be required to take this one-semester Seminar in addition to his or her regular English class. At the end of the semester, students who do not demonstrate a level of mastery close to that of their American peers may be required to continue for a second semester. Students will read several pieces of writing, all of which hope to communicate something significant about American culture. Emphasis will be placed on the kinds of class participation and academic writing which are the common forms of communication in all Millbrook School courses. Encouraged by participating in a class community which shares similar challenges as well as the goal of meeting the rigorous demands of academic life at Millbrook, students are empowered to communicate progressively more nuanced thoughts.

Strengths and weaknesses will be assessed during the first two weeks of the semester, in particular in the areas of contextual grammar, formal writing, successful communication of individual ideas, and active listening. As much as is practicable, the technical aspect of the course will be tailored to address the results of this assessment. The course meets weekly for 3 3/4 class hours, including occasional 15-minute, individual tutorials.

## **CLASSICS**

Students are not required to take a placement exam to join a Classics course; however, a teacher recommendation form provided by the Millbrook Classics Department will be required.

### **Latin I**

This course introduces the fundamentals of Latin grammar and builds a strong working vocabulary. The primary object of this class is to prepare students to begin to read unadapted Latin literature in their second year. Translation skills, vocabulary and English word derivation are stressed. As part of this preparation, students also study the history and culture of ancient Rome, the history of classical Latin literature, and classical mythology.

### **Latin II**

In this second-year course, students continue their study of Latin grammar and vocabulary, Roman history and classical culture and literature. It begins with a thorough review of the basic concepts generally covered in a first year course. The new material tackled includes the uses of the subjunctive, indirect discourse and participial phrases. Increasingly, students move from adapted Latin prose and poetry to the original works of Roman historians, who include Julius Caesar, Livy, Suetonius and Eutropius.

### **Latin III, Regular and Honors**

With the basics of Latin language firmly in their grasp, students explore the works of Roman authors in their unadapted forms. This examination is both grammatical and literary; material is selected to suit the interests and ability of the group. Authors typically studied include Cicero, Ovid, Pliny, Petronius and Sallust. In addition, Roman culture and history remain central to the discussion. When appropriate, an honors level course is offered which explores in greater detail and sophistication the Latin grammar and subject matter covered in the regular section.

### **Latin IV (*not offered in 2011 – 2012*)**

Students in Latin 4 read and translate Roman Literature. Authors include Catullus, Horace, Lucretius, Ovid, and Vergil. Emphasis is placed on refining translation skills and understanding secondary topics such as metrics and poetic figures. Geographical, historical, and cultural studies continue.

#### **Vergil: *The Aeneid***

This course reads extensive selections from Books 1, 2, 4, 6, 10 and 12 of Vergil's great epic, *The Aeneid*. In addition to translating, discussing and analyzing these passages, students read the entire epic in translation. Students improve their ability to read aloud with emphasis and to scan the dactylic hexameter verse. Care is taken to put the work into its historical perspective and to connect it to more recent literature, which takes inspiration from *The Aeneid*.

### **Advanced Readings in Latin (*not offered in 2011 – 2012*)**

Students in this advanced class read the poetry of Catullus and Horace and the comedies of Plautus. Modern translations of these poets are critiqued for their interpretation of the original. Sections of the plays are staged and recent versions, such as *A Funny Thing Happened on the Way to the Forum* are examined in contrast.

## **SCIENCE**

**Biology** (*not offered 2011-12 due to the transition in the science curriculum. Biology will be offered in 2012-13*)

This is a foundational course that begins with a study of concepts and issues in ecology with particular emphasis on biodiversity and environmental concerns. This is followed by a study of the relationship of form and function through observation of comparative anatomy and physiology. Class work is supplemented with readings from scientific and popular sources, oral presentations, research projects and an integrated laboratory program. Highlights of the program are field trips to and in the marsh and the careful dissection of a vertebrate.

*Required for all students.*

### **Chemistry**

Chemistry is the study of the structure and function of our world, from the large things that we can see to the very small ones that we cannot. Students begin this course focusing on the macroscopic world around them, pondering the nature and classification of matter. Next, students move to the subatomic world, examining the composition of the atoms, elements, and compounds that make up matter. Students learn to appreciate some of the processes happening in and around them by identifying various types of chemical reactions, balancing chemical equations, and

understanding the stoichiometry of reactions based on the concept of the mole. Other topics covered in our study include bonding, molecular geometry, acid/base chemistry, and the gas laws. Of course, no chemistry course is complete without lab experiments that allow students to experience all of these concepts first-hand as solutions bubble, fizz, change color, and possibly explode. *Prerequisite: Biology.*

### **Conceptual Physics**

Physics is truly the most fundamental of all sciences, and one of the most enjoyable. The concepts and analytical techniques of physics underlie the major concepts of biology and chemistry and a mastery of these is a prerequisite for success in all scientific fields. Conceptual Physics offers III Form students an opportunity to learn how to apply their knowledge of the scientific method by performing experiments involving, energy, force and motion. Laboratory work and mathematical skills are given equal weight with conceptual understanding. Students will also develop critical thinking and problem solving skills, which will be practiced during laboratory activities. Careful gathering and analysis of quantitative data is stressed.

### **Computational Physics**

Physics is truly the most fundamental of all sciences, and one of the most enjoyable. The concepts and analytical techniques of physics underlie the major concepts of biology and chemistry and a mastery of these is a prerequisite for success in all scientific fields. Computational Physics follows the same course flow as Conceptual Physics. Laboratory work, mathematical skills, and conceptual understanding are all emphasized, but involve more emphasis on mathematical analysis and problem solving. Computational Physics students will apply their knowledge of the scientific method by performing experiments involving, energy, force and motion. Students will also develop critical thinking and problem solving skills, which will be practiced during laboratory activities. Careful gathering and analysis of quantitative data is stressed.

### **Advanced Biology – Honors**

Advanced Biology is a laboratory/lecture/research course for the highly motivated science student. The course differs significantly from the first year Biology course with respect to the kind of textbook used, the range and depth of topics covered, the kind of hands-on/inquiry based work done by students, and the time and effort required. The primary emphasis of the course is on developing an understanding of concepts, a grasp of science as a process rather than as an accumulation of facts, personal experience in scientific inquiry and the recognition of unifying themes that integrate the major topics of biology. Central to the course is the design and implementation of a year-long research project that provides students with a unique opportunity for independent, in-depth study of a specific biological question. The project will require the design and implementation of a scientific study, statistical interpretation of data, and the reporting of findings in a research paper and/or other suitable presentation format. Studies can take place at the zoo, in the field, or in the laboratory. This program is taught at the beginning college level with expectations based accordingly. *Prerequisites: Biology, strong math and reading comprehension skills, Chemistry recommended.*

### **Advanced Physics – Honors**

In this course the student will conclude the survey of physics begun in Physics. Some topics studied in Physics will be encountered again, such as Newton's Laws of Motion and Mechanical Waves. Most of the topics, however, will be new: Uniform Circular Motion and Rotational Dynamics, Wave Nature of Light and Optics, Special Theory of Relativity, Quantum Theory and Atomic Physics. We use a college-level text, and go into greater depth than in Physics, employing

a quantitative problem solving emphasis. There will be opportunities for the student to independently research an area of his or her choice, which will be presented to the full class. The content in this course is introduced using a combination of labs, demonstrations, lectures, and independent research. *Prerequisites: Algebra I & II, Physics, a strong background in math.*

### **Advanced Chemistry – Honors**

This course offers in-depth investigation of topics not covered in Chemistry that are part of most college courses. One of the primary objectives of this course is for students to get beneath the surface of chemistry, diving into the nuances of the discipline. Laboratory investigations, real world phenomena, and discrepant events provide opportunities to hone problem-solving skills and become adept at using chemical concepts to explain actual events. Topics covered in this course include electrochemistry, equilibrium, reaction kinetics, thermodynamics, organic chemistry and other advanced topics based on student interest. *Prerequisites: Biology, Chemistry, and a strong background in math.*

## **SCIENCE ELECTIVES:**

### **Astronomy**

Where did we come from and where are we going? As Carl Sagan famously declared, “We are all starstuff.” In this year-long course the students will explore these matters and learn about the solar system, the life and death of stars, the galaxies and the evolution of the universe. While the emphasis is to develop a conceptual knowledge of these issues, there will be some algebra-based problem solving. With the use of the school’s 14-inch telescope, we will study the night sky – the stars, constellations, and planets. The Millbrook night sky is unusually clear of ambient light, making for memorable viewing opportunities. There will be opportunities for the student to independently research a topic of his or her choice, which will be presented to the full class. The course will be primarily lecture-based, with occasional classes in the computer center learning software relating to night sky observation. *Prerequisites: Algebra I & II, Physics.*

### **Discovery in Science: Conservation Biology (semester 1)**

Science is an adventure. It is a way of learning about nature and our role in it. The course will focus on a biological understanding of the diversity of plants and animals, how biological diversity arises, patterns of distribution, and biodiversity loss and extinction. It applies principles learned in genetics, ecology, and evolution, with added advanced ecological theory and concepts. *Prerequisites: General Biology, fifth or sixth form standing, and department approval. Offered in the fall semester.*

### **Discovery in Science: Forensics (semester 2)**

This course will focus on the broad field of forensics with an emphasis on the biological aspects. It will require students to use past and new scientific understanding to solve problems and analyze and apply scientific data. Use of the scientific method will be key and lab activities will accompany each topic. *Prerequisites: General Biology, fifth or sixth form standing, and department approval. Offered in the spring semester.*

### **Animal Behavior (semester 2)**

Animal behavior is considered in a broad evolutionary context. Behavior is traced from its evolutionary function as adaptation, through its physiological basis and associated mechanisms, to its expression. Students will also develop and conduct their own research projects on animal behavior at the Trevor Zoo. This is a one semester course that will be offered during the spring semester. It may be taken as an alternative semester for Discovery or as a one-semester elective.

*Prerequisites: General Biology, fifth or sixth form standing, and department approval. Offered in the spring semester.*

### **Environmental Science**

Students of environmental science examine basic ecological principles and analyze human impacts on the biosphere. Our approach is solution-oriented and focuses on sustainability—quality of life for all within the means of nature. This course is both scientific and multi-disciplinary in its approach and challenges us to use the best scientific theory, research, and data to understand a variety of contemporary environmental problems and viewpoints. Frequent field activities and trips make use of local wetlands, streams, forests, and other wildlife habitats as well as the animals at the Trevor Zoo. *Prerequisites: Biology plus one other full year lab science is preferred.*

## **HISTORY**

An old aphorism identifies experience as “that marvelous thing that allows you to recognize a mistake when you make it again.” One might say the same thing of history. The History Department presents history and social sciences not as recipes for success, but as intrinsically fascinating versions of human experience. Beginning with geographical and historical foundations of the ancient and modern worlds, the department’s courses survey some of the main patterns in story of civilization. In the United States History course, students investigate this country’s place in the larger context of the world. Senior electives then encourage the exploration of more detailed, advanced courses of study.

At the center of the department’s mission is the teaching of effective communication. Students write frequently, beginning in the third form with an emphasis on writing paragraphs, and culminating in the Blaine Essay Prize contest, in which seniors submit research papers to an outside reader for evaluation. The goal is for every student who graduates from Millbrook to have the tools necessary to ask penetrating, relevant questions, to research answers, and to articulate an opinion.

We seek also to cultivate a sense of curiosity and respect for the world’s immense cultural diversity.

### **Global Mythology and Culture**

Using myths from societies of Africa, the Americas and Asia, the III Form course examines how historical events help form a cultural identity. Students explore how a world-view is created, maintained, and challenged, while developing their own skills in interpreting and constructing narrative history. A study of the role of spirituality in human life and the interaction of people with the natural world will help guide students’ understanding of the actions of varied global cultures.

### **Modern World History**

Intended for fourth form students, Modern World History considers the development of four regions of the world – the Americas, Europe, India, Africa and the Middle East – and the ways in which these regions interact. Most written work emphasizes historical analysis and interpretation. Basic research skills are also introduced and reinforced.

### **United States History**

Required for graduation, generally taken in fifth form year, the course provides a survey of U.S. History from 1490 through the present. In the second half of the spring semester, the course focuses on three themes of U.S. history in three separate and discrete units: foreign policy between 1865 and 2003; government power and individual rights between 1865 and 2003; and race and society, 1865 to 2003. In this course, students focus primarily on historical analysis, especially of primary documents. During the winter, students engage in a research paper. The text is *A People and a Nation* by Mary Beth Norton.

### ***SENIOR ELECTIVES IN HISTORY AND SOCIAL SCIENCES***

History is not required in the senior year at Millbrook. We strongly encourage each student to take at least one course in the department, or Art History, which is offered in the Arts Department. Many students choose to take more than one history course.

### **Dissent in Theory and Practice**

Every individual must ask herself whether she will conform to the expectations of the group or act differently. Each decision not to conform is an act of dissent. This course examines the ways in which people dissent. It includes units on current events (in the Middle East, for example), humor, art, and American history. Students play a central role in choosing the specific content of the course.

### **Psychology**

Psychology asks, “Why do individuals behave as they do?” The purpose of the psychology course is to survey a variety of fields of psychology each of which attempts to answer the essential question. The primary focus of the class will be experimentation. Students will work independently and in groups to design experiments and to raise and answer their own questions. Areas of study may include memory, learning, child development, stress, sensation and perception and social psychology.

### **Anthropology**

This course considers the ways in which cultures develop. What patterns have emerged over the course of human history? How can we study the ways society influences individuals? How does our own society operate on us? In this course, students will read the work of professional anthropologists, and then learn to construct their own ideas about these questions.

### **Constitutional Law**

The heart of this course is a series of moot courts – fake hearings before a “Supreme Court” – based on real cases. Most of the work in the course consists of reading Supreme Court opinions and then writing responses to them. We consider racial and gender equality, personal liberties, state and federal powers, and other constitutional issues.

### **Comparative Economics**

This course will cover traditional economic theory, including micro and macro-economic concepts, as well as the relatively new concept of ecological economics. The class will be organized around economic puzzles, which will require students to use a variety of lenses to solve. Further, this class will force students to evaluate the relative strengths and weakness of the different approaches. The class will end with a primer on personal economics and the nature of money in everyday life from credit cards to buying a house and investing in the stock market.

## **ARTS**

### **Visual Arts**

#### **Beginning Drawing**

This is an introductory single semester course that is welcoming to all students regardless of previous experience. The fundamentals of composition and the various elements that make up a quality drawing will be taught. Students will utilize various materials such as: graphite pencils, charcoal, oil and soft pastels, colored pencils, and pen & ink. In addition, students will be introduced to a variety of concepts such as: figure-ground relationship, the fundamentals of creating two and three dimensional space, linear perspective, and how to read the language of positive & negative space. They will learn the techniques of contour, cross contour, texture, line, gesture, and eraser drawing. Students will draw from still life arrangements, their observation outdoors and from assignments that use their imaginations. This is a beginning class meant to rekindle or ignite student creativity. By the end of the semester each student will become more confident, engaged and ready to go onto an advanced level course. *Semester long course offered in the fall and spring semesters. No prerequisite.*

#### **Beginning Graphic Design**

The goal of this course is to familiarize students with the Adobe Creative Suite programs in designing print media. Students will complete assignments based on various categories of communication outlets including newspapers, magazines, and posters. Students will learn to blend images, text, and digitally create graphics into finished works while studying the aesthetic of design. While there is an emphasis on designing for function, the course will also explore the potential for creating works of art in the digital realm. *Semester long course – offered in spring semester. No prerequisite.*

#### **Beginning Printmaking**

Printmaking is the practice of creating multiple identical images from a matrix, or original and different surface. There are four distinct categories of printmaking; intaglio, relief, lithography, and serigraphy. We will be experimenting in each one of these categories, but focusing on intaglio and relief. Printmaking may seem obscure but it has been around for thousands of years and you have interacted with prints more than you might think. Do you have a poster on your wall? Have you ever seen a road sign? These are forms of prints, multiple identical images made from a single original. Printmaking is essential to the histories of religion, books, and gambling; think about bibles, novels, and playing cards.

Intaglio is a process whereby ink is transferred from the lower portions of a plate. One carves lines and marks into a copper plate then applies ink to the plate then scrapes it off. The ink remains only in the grooves, the lower areas, formed on the plate. The plate is then run through a press, inked up again, and run through again, creating a suite of identical images.

Relief is when the ink transferred is on the higher areas of a plate, or more commonly a block of wood or linoleum. The block is carved into and inked up. In this case the ink will rest outside of the grooves, on the raised portions of the block. The block is run through press and multiples are made. We will experiment with lithography, which is a Plano graphic technique dependent entirely upon chemical aversions, as well as serigraphy, which is a fancy name for screen printing. *Semester long course – offered in fall and spring semesters. No prerequisites*

#### **Advanced Printmaking**

Printmaking is the practice of creating multiple identical images from a matrix, or original and different surface. There are four distinct categories of printmaking; intaglio, relief, lithography,

and serigraphy. We will be experimenting in each one of these categories, but focusing on intaglio and relief. Printmaking may seem obscure but it has been around for thousands of years and you have interacted with prints more than you might think. Do you have a poster on your wall? Have you ever seen a road sign? These are forms of prints, multiple identical images made from a single original. Printmaking is essential to the histories of religion, books, and gambling; think about bibles, novels, and playing cards.

In Advanced Printmaking we will be building onto the experience and practices learned in Beginning Printmaking. We will be exploring new forms of Printmaking, using new materials, and becoming more invested in the traditional practices of the medium. Students will learn how to better print their work and create a more consistent, identical edition by making proofs and enhancing their visual language acuity. *Year long course. Prerequisite: Beginning Printmaking*

### **Advanced Drawing & Painting/Printmaking**

Advanced Drawing & Painting is a course designed to further develop a broader understanding of the materials, techniques, and concepts associated with drawing and painting. Students will get the change to work with many drawing mediums, oil and acrylic paints as well as be introduced to print making practices involving copper plates and linoleum. The appreciation of art, art forms and critical analysis will enhance the students' awareness of concept development and potential for the material being used. Students will be asked to maintain a journal of observational entries that will be used in building a vocabulary for the translation of ideas, and a portfolio for purposes of critique. All students will be asked to exhibit their work and to participate in class critiques. *Year long course. Prerequisite: Beginning Drawing and Beginning Painting.*

### **Honors Drawing & Painting/ Mixed Media**

Honors Drawing and Painting/ Mixed Media is an honors studio course designed to further develop and enhance the student's awareness and knowledge of his or her selected craft. Although students will have an opportunity to work on their projects independently, all students are required to be responsible for the time allotted to them one night a week for three hours. In addition, students are strongly encouraged to work in their studios beyond the evening class time. Individual journals will be kept to gather ideas for projects and a portfolio of student work will be used for critique. The portfolio will be accompanied by an artist's statement. Reading assignments will be issued and class critiques will be of the utmost importance. All honors students will be required to exhibit in the Advanced/Honors show at the end of the year. *Year long course. Prerequisites: Beginning Drawing or Beginning Painting, Advanced Drawing and Painting, portfolio review.*

### **Art History: Aesthetics Greene & Greene**

This course is an introduction to architecture and the decorative arts with an emphasis on aesthetics and the importance of hand craftsmanship throughout history. There will be a special focus on the Arts & Crafts Movement at the turn of the twentieth century, featuring the works of the well-known California architects Greene & Greene. The culminating activity will be an exhibit that showcases these important architects, as well as craftsmen similarly working in this tradition today. *Year long course for juniors or seniors*

### **Beginning Ceramics**

This course will focus on basic ceramic skills including hand-building and wheel throwing techniques. Students will learn techniques such as pinch pots, coiling, and slab-building, and spend a block of time learning to use the potter's wheel. The primary emphasis of this course is to introduce the student to the ceramics studio, use of clay and the materials used in the process of making ceramic forms. Students will be asked to keep a journal to develop ideas and to

participate in class critiques. *Semester long course offered in the fall and spring semesters. No prerequisite.*

### **Advanced Ceramics**

This course will focus on the further exploration of hand-building and some wheel throwing techniques. Emphasis will be placed on craftsmanship and the communication of each individual's ideas. A journal will be kept to help formulate these ideas and involvement in class critique will be essential. Students will be expected to exhibit their work in the Warner Gallery at the close of the year. A visual portfolio of student work will be important.

*Year long course. Prerequisite: Beginning ceramics.*

### **Honors Ceramics/Mixed Media**

Honors Ceramics/Mixed Media will be broken up into two distinctive semesters. The first semester will focus on the various surface design techniques associated with wheel throwing and hand-building. Students will explore heavily glazing calculations and techniques, resists, slip trailing and casting, and alternative methods of image application.

In the second semester students will have more of an independent focus, which will allow students to use their advanced skills in helping to develop a creative, working studio environment. Emphasis will be on the exploration of ideas and alternate ways of working with ceramics. Students will keep a journal for the exploration of ideas about projects, involved in the critique of their own work and the work of their studio mates, and exhibit in the close of the year Warner Gallery student exhibit. In addition, students will develop an artist's statement that will accompany their visual portfolio of ceramic work. *Year long course. Prerequisite: Beginning ceramics, advanced ceramics under its previous configuration, and instructor approval. Note: Honors courses in the arts are offered or held in the evening one night a week for three hours.*

## **Photographic Arts**

### **Beginning Photography**

The beginning photography class introduces the medium of photography to students. The class teaches technical skills such as printing, processing, and shooting with a mechanical camera. Homework and projects (concluding in critiques) focus on aesthetic choices such as composition and meaning. You will investigate two major questions in this class; how do I make an image and how do I make it mean something? *Semester long course offered in the spring and fall semesters. No prerequisites.*

### **Advanced Photography**

This course is designed to further enhance student awareness of the visual concepts and techniques associated with photography. Emphasis will be on the fine art of photography. To that end, students will explore the world of the image and its relationship to the camera. Students will work in the darkroom and move to a digital format in an effort to assist them in the process of learning the potential of a photograph.

Through experiment and practice, individual and group assignments, this course will challenge students to acquire a higher level of understanding, skill, and appreciation of photography as a significant art form. Class critique is a vital part of this course and students are expected to participate. A journal will be kept to explore ideas. Study of a photographer or photographic movement will be required. Students will show their work in a student exhibit in the Warner Gallery at the close of the year. A visual portfolio of student work will be essential. *Year long*

course. *Prerequisite: Beginning Photography. Students must have a 35mm SLR camera with manual capabilities.*

### **Honors Photography**

Honors Photography is a course designed to work as a studio where students can explore ideas independent of assignments. The emphasis of this course is to build an understanding of the potential of a photograph as a work of art. Both the darkroom and digital formats will be used. Students must keep a journal to explore ideas and be active participants in class critiques. The focus of this class is to assist the student in developing a strong portfolio of their work. To this end, students must concentrate on putting together a comprehensive body of work that demonstrates their skill and proficiency in photography. Students will be asked to complete an artist's statement to accompany their portfolio and to exhibit in the student exhibit in the Warner Gallery at the close of the year. *Year long course. Prerequisites: Beginning and Advanced Photography and instructor approval. Students must have a 35mm, and or, digital camera: both preferred.*

### **Advanced Digital Video (will not be offered in 2011-12)**

This semester long course will build on the camera skills and DV computer-based editing techniques learned in the beginning Digital Video class. We will consider further elements of visual composition, camera movement, picture quality, and lighting, sound recording, sequencing, script writing, storyboarding, screen direction, and DVD authoring. In addition to creating a repertoire of hands-on production experiences, we will continue to develop directing, writing, pre-production and post-production planning skills. We will study the works of classic film directors and develop an awareness of the aesthetic and practical implications of visual story telling. *Year long course offered both semesters. Prerequisite: Beginning Photography, and/or Digital Photography and Digital Video I. Due to considerations of computer access, this class is limited to six students.*

## **Music/Instrumental/Theater Arts**

### **Third Form Chorus**

The third form chorus has two main objectives. The first objective is to explore and develop skills and experiences associated with the performing arts. Students will learn basic vocal techniques, solfege and music notation and explore concepts of rhythm, pitch, timbre and other qualities of music. These skills will be put to use in various forms, including both informal games and more traditional performances.

The second objective is to begin to develop a sense of community. Students will work together as an ensemble to prepare for various performances and through this process of community work ethic, learn to achieve a unified outcome as a member of a large group. *Year long course. Required of all third formers.*

### **Millbrook Singers**

Millbrook Singers is an ensemble of students interested in doing choral work. This class will focus on understanding vocal music and refining the vocal instrument. Students will participate in a variety of performances including arts nights, special forums and school ceremonies and will work in conjunction with Millbrook's Community Chorus. This is a highly useful course for students wishing to pursue an interest in music. *Year long course open to all students. No prerequisites.*

### **Instrumental Ensemble**

The Instrumental Ensemble class is the Millbrook School's equivalent of a larger school's band or orchestra. The instrumentation usually includes some combination of woodwind, bass and keyboard instruments along with drums, electric guitar and bass. During the course of the year, the class will learn to play selections of various styles of music, including some or all of the following: jazz, classical, rock, rhythm and blues, pop and folk music. Material will be chosen and arranged based on the skill level of the various members of the ensemble. Those who would like to improvise will be given an opportunity to do so. Student suggestions for addition to the group's repertoire are welcome. Each semester the class will prepare for a concert that will take place toward the end of the semester. There will be time devoted to recording of the repertoire. This is a fun class! *Year long course open to all students.*

### **Music Appreciation - Music of the 60's**

Although rock 'n roll had its beginnings in the 1950's with the likes of Elvis Presley and Chuck Berry, the 1960's was the time when fifties rock, rhythm and blues and acoustic folk music combined to bring about what we now think of as classic rock. Ironically, the catalysts for the music explosion of the 60's were young musicians from England who played their own versions of songs they learned from American recordings.

The 60's was a time of historic change in the United States, from the anti-war movement to the advancement of civil rights, and the music of the time couldn't help but be shaped by what was going on in society. What started out often being dismissed as "Pop Music" became a legitimate art form that provided a soundtrack for millions of young people.

This course will follow the remarkable progression of music through the 1960's by studying the artists who made the most significant contributions and the social context in which influenced their compositions. It will also focus on the evolution of concerts and festivals including Monterey, Woodstock and the infamous concert at Altamont in December of '69. *Semester long course – offered in the fall semester only. No prerequisites*

### **Music Appreciation: From Bach to Rock**

This class will study the evolution of American music over the last century with an emphasis on Blues, Gospel, Ragtime, Jazz, Rhythm & Blues, Folk Music, Rock and contemporary styles. Attention will also be paid to ancient and classical music from Europe because of its profound influence on all of contemporary music.

It is my belief that, regardless of its category, the music we choose to listen too reflects a great deal about who we are. As such, and to serve as a starting point for our discussions, the beginning of this course will be dedicated to having everyone share their favorite music with one another. Listening to music, watching concert footage and group discussions will be regular classroom activities. In addition, the class will spend some periods playing musical instruments. Beginners can try their hand at guitar, bass, keyboard or drums, while those who already know how to play can expand their craft and share their knowledge with others. *Semester long course – offered in spring semester only. No prerequisites*

### **Guitar Studio Class**

This class is designed to give guitarists a chance to work on their instruments in a setting that will provide individual instruction as well as an opportunity to work together in small or large groups. Students will learn new techniques in a variety of styles on acoustic and electric guitars. Material covered will include learning songs, chords, strumming, scale patterns, improvisation, finger picking, tablature, standard notation and theory.

Each member of the class will be encouraged to work on specific things he or she needs to become a more complete and well-rounded guitarist. The more advanced members of the class will be encouraged to serve as mentors to those with less experience. Members of the class will also have the opportunity to perform during Arts Night toward the end of each semester. *Yearlong courses open to students with a background in guitar. Bass guitarists are welcome.*

**Note:** Private instruction on all standard musical instruments and in voice is available apart from music courses. An additional fee is required for these lessons. Private lessons are not for credit.

### **Beginning Dance (offered as a sports alternative)**

Beginning Dance provides a disciplined approach involving rhythm, dynamics, sensation, shape, and space to facilitate efficient movement. These essential tools provide a foundation for the novice to the advanced dancer to increase technical skill and vocabulary. *Semester long course – offered in fall and spring semesters. No prerequisites*

### **Choreography**

Choreography breaks down the dance composition process. By creating short studies of movement, students first become conscious of time, which is then emphasized by the students adding musical accompaniment. Students also explore, through movement studies, dynamics in movement, sensation of movement, body shape design, and clear use of space to complete a final dance structure. *Semester long course, offered in fall and spring semesters.*

### **Playwriting**

This year long creative writing course is designed for students who are interested in exploring themes and styles of dramatic writing while also improving writing skills, encouraging imaginative thinking, and working on the process of writing a one-act play. Areas of focus include character development, dramatic structure, dialogue, and effective exposition. In addition, students will engage in writing exercises and read examples of great drama, from classic to contemporary, drawing on a wide range of aesthetics. Students will present portions of their developing work to the class, receive feedback, edit, and finally, submit a final draft for production in the spring term. Students from Advanced Scene Study will collaborate in the process of bringing the Playwright's work to life. The final performance will include all elements of production including lights, sound, costumes, and of course an invited audience. *Year-long course. No prerequisites. Can also be taken as an English elective, in addition to the required form appropriate English course (see English Department offerings).*

### **Introduction to Theater**

Students are introduced to the fundamentals of ensemble work, acting, improvisation and staging. We will work with the body, voice, and imagination as tools in the exploration of character, physical expression, and artful communication. Students work collaboratively to develop monologues, create scenes, and analyze text. An introduction to the history of theatre is included in this course. Students will also be required to attend at least one performance per term and will enjoy guest speakers throughout the year. *Semester long course, offered in fall and spring semesters. No prerequisites.*

### **Advanced Scene Study**

This course is designed to further expand the actor's resources through the development of both internal and external principles. Exploration of physical and vocal range along with character and text analysis is also examined. Coursework will include scripted scenes, monologue work, and improvisation. Fundamental skills will continue to be stressed as we dive in and begin to work

with various acting techniques and styles of acting. Students will also be required to attend at least one performance per term and will enjoy guest speakers throughout the year. *Year long course. Prerequisite: Introduction to Theatre or equivalent.*

### **Public Speaking**

In this course, students will explore a variety of styles and modes of communicating with multiple opportunities for verbal presentation. Students will explore the art of Public Speaking through writing, critical analysis and oral presentation. Students will explore ways to overcome shyness, fear, or insecurities in Public Speaking through technical and practical means. The emphasis will be on developing comfort with vocal range, physical stance, and logical and articulate presentation of work. *Semester long course, offered in fall and spring semesters, no prerequisites.*

Students will focus on presenting their work with confidence and ownership, while also practicing the art of active listening