



# Curriculum Guide

2015-2016

# BERKSHIRE SCHOOL

## Mission Statement

Rooted in an inspiring natural setting, Berkshire School instills the highest standards of character and citizenship and a commitment to academic, artistic, and athletic excellence. Our community fosters diversity, a dedication to environmental stewardship, and an enduring love for learning.

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# Academic Program

## Course of Study

At the heart of Berkshire's academic program is a rigorous and comprehensive college preparatory curriculum that fosters critical thinking, problem-solving, and intellectual curiosity across all disciplines. Five academic courses are the standard full load for most students. Students are strongly encouraged to pursue a subject to the most advanced level possible, which for many means taking courses well beyond those required for graduation. Each student's course of study is planned by the advisor, Form Dean, and Dean of Academic Affairs. Form Deans and the Dean of Academic Affairs oversee and support the academic progress and performance of each student.

## Graduation Requirements

Students earn one credit upon successful completion of a yearlong course and one-half credit upon successful completion of a semester course. To graduate, students must earn 18 credits and meet the following distribution requirements:

**English:** Four years of English, including English VI

**Fine Arts:** One credit of visual and/or performing art

**History:** Two years, including Modern World History and U.S. History. In addition, third formers must complete World History.

**Language:** Three years of the same language through level III

**Mathematics:** Three years of mathematics, including Algebra I, Geometry, and Algebra II

**Science:** Two core laboratory sciences (Biology, Chemistry, Physics)

To pass a yearlong course, the average of the first and second semesters must be a passing grade. In addition, sixth formers must pass all course work undertaken during the second semester to graduate.

## Advanced Courses

Students who have demonstrated a strong commitment and aptitude in a particular subject may be placed in an advanced section of a course. Advanced courses are accelerated and extend the curriculum of a regular course, challenging the student to apply concepts and skills at a higher level. Placement in an advanced course is determined by the department in consultation with the Dean of Academic Affairs.

## Advanced Placement Courses

All departments at Berkshire offer Advanced Placement (AP) courses that can help a motivated and qualified student prepare for the College Board Advanced Placement Exams. Selection for an Advanced Placement course requires the successful completion of all course prerequisites and is determined by the department. Students who score successfully on the examination may be eligible for advanced standing in many colleges and universities. All students enrolled in Advanced Placement courses are required to take the AP Examination for that course.

## Independent Study

Motivated students who demonstrate the commitment and aptitude to work independently at an advanced level may develop an independent study project in consultation with a faculty sponsor. An independent study may be taken as a sixth course, either as a semester or yearlong course, and requires department approval.

# English

The English Department emphasizes 21<sup>st</sup> century skills by building on traditional ones. We teach students to read carefully and appreciatively and to write clearly and expressively, emphasizing critical thinking and problem solving throughout our curriculum. Each form has a course theme, which expands upon that of the year before and is developmentally consistent with the achievements and interests of our students. We use both canonical and more contemporary texts in the service of addressing these themes, scaffolding skills as our students prepare for study, work, and life in the world beyond Berkshire.

Consistent with our mission we keep close watch over our students' progress by assigning, evaluating and returning academic writing such as analytical, persuasive, and personal essays as well as original stories, poems, and scenes. Our students gain additional writing practice through frequent quizzes, short reading responses and journal entries. We teach grammar in both formal and performative sense. We have our students review etymology and vocabulary in a structured manner, and we review strategies for standardized tests.

Paying attention to the traditional building blocks of communication while engaging our students in Web research, online discussion sites and interactive presentations, we prepare them for the varied demands of college and life. While reading important works of literature in a thoughtful manner, our students can develop a more informed and compassionate perspective toward the larger community, with special regard to issues of sustainability. Our fundamental assumption is that by working with language, literature and ideas in a dynamic fashion, students will develop their abilities not only to communicate but also to think and reason critically. By stressing the relationship between writers and readers, we make our students more aware of the multiple aspects of communication in a complex world.

### **English III: Individual as Hero**

*(Regular and Advanced)*

Covering classic and contemporary texts in a variety of genres, such as *Into the Wild*, *The Odyssey*, *Their Eyes Were Watching God*, and *Henry IV, Part 1*, the English III curriculum focuses thematically upon essential elements of the hero's journey at a time when our students are setting forth on their own missions of self-discovery as readers, writers and thinkers. In English III, third formers receive a thorough grounding in principles of grammar and vocabulary while mastering the structures of various kinds of paragraphs and essays. Throughout the year, third-form teachers stress fundamental study skills important to all Berkshire classes, including critical reading, detailed note-taking, organization of course materials, and timely completion and submission of work.

### **English IV: Individuals in Communities**

*(Regular and Advanced)*

In the English IV reading curriculum, students develop critical reading skills through the study of a variety of literary genres—fiction, drama, poetry and personal narrative—in their structural elements; representative works include *Oedipus Rex*, *The Taming of the Shrew*, *Frankenstein*, *The Kite Runner* as well as numerous short

stories, poems, and a memoir. Building on the English III theme of the hero's journey, fourth formers broaden their focus to the role of the individual in larger communities. Students continue to review grammar and usage, but exclusively in context of strengthening and revising their own writing, and acquire knowledge of Latin and Greek etymology. English IV's writing curriculum expands on the range of the third-form assignments, focusing on more complex and formally structured expository/analytical essays, but also includes a personal memoir and a poetry portfolio. Students perform a Shakespearean scene as a means to understanding as well as participate in "Poetry Out Loud," a national recitation project, in order to learn about poetry from a performance perspective.

### **English V: American Identities**

*(Regular and Advanced)*

The fifth-form year concentrates on the American identity in literature from the nineteenth century to the present day. Representative authors include Whitman, Dickinson, Thoreau, and Fitzgerald, in addition to more contemporary writers such as Toni Morrison and Tony Kushner. Expanding on the genres studied in earlier years, this course includes screenplay, film, and audio essays. Students continue to build their working

vocabularies through careful attention to course texts, especially focusing on words that regularly appear on standardized tests, and improve other skills relevant to the SAT and ACT exams. As with the fourth-form year, critical analysis is a central component of the written work, and fifth formers begin to work more extensively with secondary sources at this level. Written work includes journals and blogs, expository essays, personal reflection, screenwriting, and research papers. In the second semester, students write and record “This I Believe” essays, in preparation for personal writing critical to the college application process and beyond.

### **Advanced Placement English Language and Composition**

Advanced Placement English Language and Composition is a yearlong course for qualified fifth formers who wish to become skilled readers of prose written in a variety of rhetorical contexts and to become skilled writers who compose for a variety of purposes. The course emphasizes the expository, analytical, and argumentative writing that forms the basis of academic and professional communication, as well as the personal and reflective writing that fosters the ability to write in any context. In preparation for the AP English Language and Composition examination, students become acquainted with a wide variety of prose styles from many disciplines and historical periods, and gain understanding of the connections between writing and interpretive skill in reading.

*Prerequisite: Permission of Department*

### **English VI: British Literature**

*(Regular and Advanced)*

English VI is divided into two semesters: a British literature course in the first semester and electives, as follows, in the second semester. Throughout the first semester, students continue to hone their critical thinking skills while focusing on various genres of British literature, be it drama, poetry, fiction, or essays. Representative authors include William Shakespeare, Aphra Behn, Thomas Hardy, T.S. Eliot, Emily Bontë, and Mary Shelly. A strong emphasis continues to be placed on various modes of written and oral expression. For “Hamlet Night,” students create and perform personal adaptations of Shakespeare’s play and write persuasive essays. As a culminating project to the semester, students craft a substantial analytical essay comparing *Hamlet* to a work of contemporary British literature. Mirroring writing asked of students in college literature courses, sixth formers analyze structure, style, and usage of figurative language as well as employ secondary sources to support their literary analyses.

### **English VI: Second Semester Electives**

*(Italicized offerings below may vary each year)*

#### ***Big Book***

*(Semester 2)*

In a time when one’s attention is often drawn in several directions simultaneously and many people limit their communication to 140 character bursts, it is becoming rare for people to put forth the sustained energy required to read a long book. In this course, students take on that challenge by intensively reading one novel of substantial length. This in-depth reading is supplemented by related short stories, non-fiction articles, and other materials appropriate for enhancing understanding. At the conclusion of the course, students walk away with a thorough understanding of a notable piece of literature.

#### ***Boarding School Literature***

*(Semester 2)*

While reading the Boarding School literary canon, students delve into the identity of boarding school and how it is perceived upon a student’s arrival and then, much later, to an alumnus’ memory after departure. Representative titles include *A Separate Peace*, *Perfectly Prep*, *Old School*, and *Leaving Maggie Hope*. The purpose of this course is to look at boarding school identity as a broad concept to be understood and communicated—in marketing the school to prospective students and alumni but also in articulating the meaning of the boarding school experience overall. Thus, in addition to traditional analytical papers about boarding school novels, students also practice “professional English”—including business letters, blog and newsletter articles, interviews, flyers, professional email, PowerPoint and any other type of written word deemed necessary to communicate what Berkshire School “is all about” inside and outside our community.

#### ***College Writing***

*(Semester 2)*

Modeled after an introductory composition course at the college level, this course prepares students to write effectively in the four predominant rhetorical modes: expository, analytical, narrative and persuasive. Students propose, draft, revise and submit one major paper in each of these modes, augmenting their writing skills by reading sample texts that demonstrate a skillful use of language and argumentation. By the end of the semester, each student leaves with the tools to succeed as a writer in the college classroom.

#### ***Contemporary Playwrights***

*(Semester 2)*

In this course, students study playwrights from Henrik Ibsen to the present. Throughout the semester, students study how a time period impacts themes in plays: they

consider how theater addresses social and cultural issues of that time period. Students read about Stanislavski's introduction to a method of acting and how his techniques impacted the portrayal of realism on stage. Ultimately, students gain an understanding of how plays imitate life. Writing assignments include analytical essays and storyboards where students will envision how they believe a scene should be staged. During the semester, students also attend a production of a play at either Hartford Stage or Yale Repertory Theatre.

### ***Harlem Renaissance: Circa 1917-1934***

*(Semester 2)*

Through a close look at the literary and performing arts, e.g., poetry, essays, short stories, film and fiction, students analyze and examine the interdisciplinary connections of the arts acknowledged to be central in the development of the African-American voice in literature. This examination also includes a review of the Afro-American idioms such as blues, jazz and improvisation, as well as the importance of the cultural center of the Renaissance—Harlem's Apollo Theatre. Students write several analytical papers along with a culminating individual project. In addition to various essays, articles and speeches, the following texts are among our literary resources: *The Souls of Black Folk* by W.E.B. Du Bois, *There is Confusion* by Jessie Fauset, and *Harlem Renaissance Reader* edited by David Levering Lewis.

### ***Introduction to Film***

*(Semester 2)*

This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques as well as content issues of humanity, psychology, and philosophy. Through course readings and class discussions, students analyze major textual elements of cinema (narrative, characterization, plot, and symbolism), technical elements of cinema (mise en scene, cinematography, sound, and editing) and major cultural elements of cinema. Student reflections on film, be they historical, critical or personal, take form in weekly essays and presentations. Upon completion, students are able to analyze critically cinematographic elements in relation to respective thematic and historical contexts.

### ***Journalism***

*(Semester 2)*

This course offers students an opportunity to learn about the principles and practices of journalism: various forms of newspaper writing, graphics (including photography and cartoon), and design of the page, either for print or digital form. Through this course, students gain an understanding of journalistic writing as well as practice various modes of written expression. By the conclusion of the semester, students better appreciate the value and

impact of responsible media practices and usage. In time and with training, students enrolled in the course could act in concert with the staff and editorial board of *The Green and Gray*, the school's newspaper.

### ***The Mountain and Me***

*(Semester 2)*

This course is designed to take a literary look at the relationship between the out-of-doors, specifically our local landscape, and the individual. Students read fiction and non-fiction related to the outdoors. Authors may include John Muir, Annie Dillard, Jack London, Jon Krakauer, Rachel Carson, Edna St. Vincent Millay, and Henry David Thoreau. Writing assignments ask students to engage with class texts through analytical, persuasive and personal writing. In addition, the culminating writing assignment asks students to write about their own interactions with the natural world as those interactions relate to their experience under the Mountain. In keeping with the focus of the class, students spend some time outside of class engaging with the Mountain in various ways.

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### ***Creative Writing I, II***

*(Semester 1 and/or 2)*

This course is designed for students who, already experienced with writing poetry, fiction or creative nonfiction on their own, believe they would benefit from the structure and guidance provided by a workshop environment. Drafting, revision, and peer critique are emphasized as students develop a portfolio of their own writing across the entire semester. *This elective course may only be taken in addition to the student's Form-appropriate English course. Open to Forms IV, V and VI*

### ***Advanced Placement English Literature and Composition***

This college-level course is designed for qualified sixth formers who wish to undertake a rigorous and intensive study of British and Postcolonial literature in preparation for the AP English Literature and Composition exam. Students engage in the careful reading and critical analysis of imaginative literature (fiction, poetry, and drama) through the study of each work's structure, style, and themes, as well as such smaller-scale elements as the use of figurative language, imagery, symbolism, and tone. Writing is an integral part of the course since the exam is weighted toward student writing about literature. In order to preserve the sense of common experience among the sixth-form students as a class, most aspects of English VI are also included: timed writing in preparation for standardized tests, college application essay practice, and "Hamlet Night."

*Prerequisite: Permission of Department*

**Advanced Humanities Research**

Advanced Humanities Research is a full-year course for talented students who have a desire to pursue guided, but independent, research in the humanities. The first half of the course is a seminar on critical theory introducing students to the theoretical framework that shapes the work of humanities scholars. The first semester also includes an introduction to qualitative research methods to help students master the tools required for advanced

research in the humanities. The second half of the course is more student-directed, with each student working on an intensive piece of research, along with an identified expert in their chosen field, with the goal being to submit their research for publication. *This course may only be taken in addition to the student's Form-appropriate English course.*

*Prerequisite: Selection by Department Chairs*

## English as a Second Language (ESL)

International students at Berkshire represent a great diversity of linguistic and cultural backgrounds. To prepare students for a full course of study, Berkshire offers English as a Second Language (ESL) at the advanced level. Advanced ESL is divided into two separate courses, ESL Advanced Literature and ESL Advanced Writing, and acts as a bridge between the ESL program and the regular English program. It is intended for students who have good oral, aural, reading and writing skills but who need support in doing academic work in English. The emphasis is on developing the advanced reading and writing skills necessary to do the academic work required by Berkshire's traditional English program.

*Students must take both courses.*

**ESL Advanced Literature**

This course introduces students to American and international stories and novels. The students read short stories and novels written for native speakers that are typical for a high school English class. Students are required to keep an academic journal in which they respond to their readings. They also learn to use the literary forms and concepts studied in Berkshire's English courses.

**ESL Advanced Writing**

This course is designed to develop the students' writing skills through the process of prewriting, drafting, response, revising, and editing. This is done in conjunction with the study of complex grammatical structures. Students write both personal and academic essays and learn to write a research paper.

## Fine Arts

Visual arts students may pursue a wide range of artistic disciplines, including studio art, ceramics, photography and digital art. They may study a particular medium in depth or sample several from a broad offering of courses. While a strong technical foundation is stressed, equal emphasis is placed upon creative self-expression and developing the artist's unique voice. Advanced studies include a strong emphasis on critical and creative thinking, as well as portfolio preparation.

Performing arts courses offer students the opportunity to explore a variety of disciplines through both active participation in group ensembles and through classroom study. Courses of study are available for every level of student, from the beginner to the most advanced artist, in music, theater, and film. The programs emphasize technical proficiency, collaboration, creative expression and stage presence, with the opportunity to perform in a variety of concerts, recitals and performances throughout the year.

One credit of fine arts is required for graduation.

### Visual Art

#### **Studio Art I, II**

*(Semester 1 and/or 2)*

Studio Art I and II are semester-long courses that introduce students to a variety of fine art-making processes. Students develop conceptual and technical skills while studying drawing, painting, sculpture and mixed media. Studio Art I and II are survey courses that teach an understanding of the elements of art and principles of design. Studio work is supplemented with critiques, field trips to museums and local artist studios, as well as group public art projects.

#### **Studio Art III, IV**

*(Semester 1 and/or 2)*

These intermediate-level art courses expand upon each student's understanding of the elements of art and principles of design. Intermediate studio art courses encourage self-discovery through individual assignments based on each student's unique interests and talents. Students continue to build their portfolios by examining their own strengths and weaknesses on a regular basis. Studio work is supplemented with critiques, field trips to museums and local artist studios, and group public art projects.

#### **Advanced Studio Art V, VI**

*(Semester 1 and/or 2)*

Studio Art V and VI are advanced courses designed for the highly motivated artist. A commitment to independent work and a high level of technical competence are expected as students work with the instructor to build their breadth portfolios and develop a concentrated body of work with a theme and technique(s) of their own. Advanced studio art students may also seek

recommendations to the Advanced Placement Studio Art program in Drawing, 2-D Design, or 3-D Design.

#### **Ceramics I, II**

*(Semester 1 and/or 2)*

Ceramics I and II introduce the student to the many aspects of clay work. Students explore texture, form, and function through a variety of hand-built techniques such as pinch, coil and slab. Students gain an understanding of the many stages of clay from plastic to leatherhard, bone-dry, bisqueware and glazeware. They explore a variety of glazing and finishing techniques used in electric kiln firing. In Ceramics II, students begin to explore throwing techniques on the wheel. With an eye toward ethnic, historic, and contemporary considerations, classroom assignments challenge the blossoming potter/sculptor to embrace creative thinking while developing basic skills.

#### **Ceramics III, IV**

*(Semester 1 and/or 2)*

These intermediate-level courses allow time for the dedicated potter/sculptor to further develop and refine the skills begun in previous levels. These courses also provide an opportunity for students to take part in studio management through loading the kiln, pugging clay and making glaze test tiles. At this level, students begin developing more conceptual art, as well as refining their technique. The creative process is emphasized and expanded as each student risks failure to find success.

#### **Advanced Ceramics V, VI**

*(Semester 1 and/or 2)*

Ceramics V and VI are advanced courses for the especially motivated artist. A commitment to independent work and a high level of technical competence are expected, as students work with the



instructor to develop and complete a series of original projects. We encourage students at this level to begin developing a portfolio, if they're interested in pursuing the Advanced Placement Studio Art program in 3-D Design. Projects are very open-ended and demand a high degree of critical and creative thinking, problem-solving and time to succeed.

### **Digital Art I, II**

*(Semester 1 and/or 2)*

Digital Art I introduces students to techniques for making fine art through technological processes. Digital cameras, scanners, stylus and tablets, and professional software including Adobe Photoshop, Illustrator, and Flash are used to create both still and animated work. Student work is printed on large-format printers, including an Epson 9890 with a 44-inch span. The digital art curriculum is supplemented with exploratory lessons, field trips to museums and local design firms, and a graphic design competition. Digital Art II builds on the foundation gained at the beginning level. Students develop their portfolios while learning more advanced techniques.

### **Digital Art III, IV**

*(Semester 1 and/or 2)*

Students continue to build upon their foundations in the elements of art and principles of design in Digital Art III and IV. Exploration and experimentation are emphasized through projects that encourage independent research and original concept development. Digital Art III and IV are also supplemented with critiques, field studies in digital photography, online investigations into the work of cutting edge digital artists, and field trips to museums and local design firms.

### **Advanced Digital Art V, VI**

*(Semester 1 and/or 2)*

Digital Art V and VI are advanced courses for the dedicated artist. A commitment to independent work and a high level of technical competence are expected as students work with the instructor to complete their breadth portfolios and develop a concentrated body of work with a theme and technique(s) of their own. Advanced digital art students may also seek recommendations to the Advanced Placement Studio Art program in 2-D Design.

### **Photography I, II**

*(Semester 1 and/or 2)*

Photography I is an introduction to basic photography, exploring both digital and traditional darkroom techniques. Utilizing digital SLR cameras, iMac computers and Photoshop software, students explore basic camera operation, editing techniques and aesthetic concerns. Students are introduced to the darkroom

through pinhole camera projects. In Photography II, students build upon their earlier introduction, exploring a variety of projects in both black/white and color. Digital and 35mm film cameras are provided to students during the course.

### **Photography III, IV**

*(Semester 1 and/or 2)*

These intermediate-level courses explore representation and visual interpretation through black/white and color photography. Through a series of short-term assignments, students develop their photographic "eye" and build their portfolios of work. Coursework is supplemented with field trips to museums and galleries, as well as onsite shooting trips. Cameras are provided, but students are strongly encouraged to have their own digital SLR camera.

### **Advanced Photography V, VI**

*(Semester 1 and/or 2)*

Photography V and VI are advanced courses for the dedicated photographer. Sophisticated techniques and thematic assignments are emphasized, and a commitment to independent work is expected. Students continue developing their unique artistic vision, with an eye toward enrolling in the Advanced Placement Studio Art program in 2-D Design. A digital SLR camera is required.

### **Sculpture**

*(Semester 1 and/or 2)*

In Sculpture, students explore artistic expression and problem solving through three-dimensional design. Wood, metal, plaster, wire and recyclables are used by the artists as they work with form and space. A variety of traditional and high tech tools (including a 3-D printer) are available to students as they investigate different techniques and concepts.

### **History of Art**

*(Semester 1 and/or 2)*

History of Art compares and contrasts different styles and movements of art through the centuries, from classical antiquities to modern art and the contemporary art scene. Rather than follow a traditional timeline, the course jumps from century to century, making unusual and unexpected connections, and noticing that wildly different approaches to great art nevertheless share important characteristics and influences. Through discussion, research, and critical analysis, students reach a better understanding of how art has influenced and reflected our culture. The class incorporates numerous museum and gallery visits, as well as some "hands-on" art-making to help students better understand different approaches and techniques.

*Prerequisite: One credit of visual or performing art*

### **Advanced Placement Studio Art I (Drawing, 2-D Design, 3-D Design)**

Advanced Placement Studio Art I is a yearlong course for committed students with a strong interest in developing as artists and creative thinkers. Students concentrate on either two-dimensional media (drawing, painting, printmaking, photography) or three-dimensional work (ceramics, sculpture), with the goal of preparing and submitting a strong final AP portfolio.

*Recommended for Form V or VI*

*Prerequisite: Permission of Department*

### **Advanced Placement Studio Art II (Drawing, 2-D Design, 3-D Design)**

Advanced Placement Studio Art II is a yearlong course for students who complete Advanced Placement Studio Art I in their fifth-form year and wish to continue developing their skills for a second year of artistic growth. The dedicated art student can further explore and expand his or her portfolio with an eye towards majoring in art in college.

*Prerequisite: Advanced Placement Studio Art I and permission of Department*

## Performing Art

### **Improvisation**

*(Semester 1 and/or 2)*

This course teaches the rudiments of improvisation in a low-pressure, inclusive environment. Focused mostly on sketch comedy (a la “Whose Line is it Anyway?”), students learn exactly how the pros make it look so easy. Through unique games and exercises, participants learn the guiding principles behind good improv and develop valuable acting skills through simple warm-up games and performance improv structures. Perfect for the beginner as well as the seasoned performer, students may take improvisation for more than one semester.

### **Chamber Music, Advanced Chamber Music**

*(Semester 1 and/or 2)*

Chamber Music emphasizes small ensemble skills including musicianship, intonation, interpretation, and performance practice. Students are encouraged to practice as an ensemble. The course is open to all string, brass, woodwind, keyboard and pitched percussion instrumentalists. The Chamber Music Ensemble performs regularly throughout the year.

*Prerequisite: Two-year study of an instrument or permission of instructor*

### **Digital Music I, II, III, IV**

*(Semester 1 and/or 2)*

Using keyboard synthesizers and computers, students work independently to create original musical compositions. Each course covers the study of MIDI

(Musical Instrument Digital Interface), as well as digital audio techniques including live recordings and digital wave editing. Students create a CD of their own compositions by the end of each semester. No musical experience is required.

### **Music Theory I**

*(Semester 1)*

Music Theory allows students to explore music outside of our performing ensemble groups. This course is an introduction to the study of functional harmony including scales, intervals, chord constructions, harmonic progression, counterpoint, and ear-training. No musical experience is required. *Open to Forms IV, V and VI*

### **Advanced Music Theory II**

*(Semester 2)*

This second semester of Music Theory continues the study of functional harmony with an introduction to twentieth century music theory. Students analyze chorales, sonatas, symphonies and other works, and they begin creating simple compositions including chorales and solo piano compositions.

*Prerequisite: Music Theory I or permission of instructor*

### **Chorus, Advanced Chorus**

*(Semester 1 and/or 2)*

The Berkshire Chorus sings madrigals, motets, popular arrangements, folk music of Africa, music from the Balkans, shape-note hymns of North America and much, much more. Students learn basic musicianship skills including intonation, vocal blending, diction, vocal production, breath control, and phrasing. The course emphasizes singing in a cappella style, as well as with instrumental accompaniment. Berkshire Chorus performs regularly throughout the year, both on and off campus. No musical experience is required. Placement in Advanced Chorus is by audition only.

### **Jazz Ensemble, Advanced Jazz Ensemble**

*(Semester 1 and/or 2)*

Students develop musicianship and ensemble performance skills working with fellow musicians on a wide range of music, ranging from concert band arrangements to jazz and rock standards. The ensemble performs regularly throughout the year. Placement in Advanced Jazz Ensemble is by audition only.

*Prerequisite: Two-year study of an instrument or permission of instructor*

### **Private Voice, Instrumental and Dance Lessons**

Private non-credit lessons may be arranged through the Music Director or Art Department Chair. An additional fee will be charged.

# History

The goal of the History Department is to introduce students to the rich cultural variety of the human community, to acquaint them with the development of the major traditions underlying civilization, and to provide them with an opportunity to read history in depth. Topics studied include the recent development of societies around the globe as well as the organization and dynamics of social, economic, religious, and political institutions that shape the world today.

The students learn through multimedia presentations which include the use of Smartboards and tablets that help to spark debate and discussions. Our students progress each year through a planned curriculum focused on maximizing reading and writing levels, while developing both the critical and creative thinking skills needed to meet the challenge of collegiate academics.

Two years, including Modern World History and U.S. History, are required for graduation. In addition, third formers must complete World History.

## **World History** (*Regular and Advanced*)

This third-form course will help students understand how five major world religions have shaped past, current, and future historical events on a global scale. More specifically, students will study the basic tenets of Hinduism, Buddhism, Judaism, Christianity, and Islam in relation to historical examples and more contemporary events. While content will play an important role in this course, a great deal of focus will be put on the development and utilization of the following core skills: effective note-taking, critical reading and writing, primary and secondary source analysis, cogent public speaking, and basic research methods.

## **Modern World History** (*Regular and Advanced*)

Modern World History acquaints students with the major events, concepts, and trends that have developed around the world from the Scientific Revolution to the modern day. The course examines themes and events in Europe, Africa, the Middle East, the Americas, and Asia. The primary themes of the course include political and social systems, global interactions, religious and ethical systems, and scientific and technological innovations. Students develop the skills to read critically and research effectively through the use of primary and secondary sources; they also become comfortable with presentation technology and public speaking. Students master thesis-based essays and write a research essay on a topic in world history as a culmination of their studies. A portion of class each week is dedicated to studying current events, thus encouraging them to relate historical topics to the issues facing the post 9-11 world. Through demanding readings, group discussions, research projects and presentations, students come to learn about their roles in the larger global community.

## **United States History** (*Regular and Advanced*)

Required for graduation and usually taken during the fifth-form year, this course is a chronological survey of U.S. history from the colonial period to the present. Topics studied include the colonization of British America, the American Revolution, the establishment of the Federal Republic, territorial expansion and the growth of sectionalism, the Civil War, the development of the United States as an industrial and world power, and the Cold War. Although the course focuses on political development, students also examine the key economic and social developments in U.S. history. Students develop research skills and the ability to use documentary evidence in developing a thesis and are required to write essays, short papers and a significant, college-level research project.

## **Economics and Philanthropy**

The class begins in the first semester by providing students with a foundation in micro and macro-economic principles: supply, demand, market equilibrium, subjective value theory, theory of production, theory of cost, and different forms of industrial organization. The second semester turns toward a project-based curriculum focusing on the non-profit sector and the needs of our local community. Through field trips, visiting speakers, and exchanges with Berkshire alumni, students gain a better understanding of the important social role that charitable organizations play. Students, working with a Berkshire donor who has established an endowment for philanthropy, invite local organizations to apply for the funds. Students ultimately determine where the funds will be applied, thus gaining real-world experience that can make an actual difference in the lives of around us.  
*Prerequisite: U.S. History or permission of Department*

**Advanced Economics**

Advanced Economics blends a traditional, theory-based approach to economics with the practical applications of business management and planning. In addition to discussing and debating micro- and macroeconomic concepts, students form groups to devise and write a business plan for a product or service of their own choosing. Groups compete for the Sabin Entrepreneurial Prize, to be awarded in the spring. Business plans are evaluated by a team of judges on the basis of their ingenuity, soundness, and sustainability.

*Prerequisite: U.S. History and permission of Department*

**Constitutional Law**

*(Semester 1)*

Using what the American Bar Association called the twenty most influential Supreme Court decisions in our history as a guide, students study the American governmental system from the point of view of the judicial branch of government. Students are required to write a summation and essay on each of the cases.

*Prerequisite: U.S. History or permission of Department*

**Islam, Christianity, and Judaism**

*(Semester 1)*

This course introduces students to the three Abrahamic religions through the study of each religion's Holy Scriptures: the Hebrew Bible, the New Testament, and the Qur'an. The course includes a discussion of the history of each religion and text, as well as themes and issues that arise from each. Students visit a service for each of the religions and engage in discussion and debate via video conference with a school in the Middle East.

*Prerequisite: Modern World History or permission of Department*

**Philosophy of Religion**

*(Semester 1)*

This course explores the philosophical concepts surrounding the central theistic notion of God. Questions considered are: Does such a being exist at all? If so, what qualities does it possess (omnipotence, omniscience, omnibenevolence)? Are there any proofs for the existence of God? Is the existence of God compatible with the existence of undeserved suffering and other evils? Through classroom discussion and systematic evaluation of philosophical arguments, students explore the ideas and responses of several renowned philosophers to these fundamental questions.

*Prerequisite: Prerequisite: Modern World History or permission of Department*

**Ethics**

*(Semester 2)*

This course encourages students to contemplate the nature of morally right behavior. After initial discussion and debate of the central ethical theories (including cultural relativism, utilitarianism, and Kantianism), students examine several applied topics. Controversial issues considered previously in the course have included abortion, euthanasia, animal rights, cloning, the ethics of war, world hunger, and the death penalty. Students are expected to formally direct much of the class during the final quarter of the course by selecting, researching, and leading a debate about a controversial ethical topic.

*Prerequisite: Modern World History or permission of Department*

**History through Speech**

*(Semester 2)*

The ability to speak in front of crowds and to formulate a persuasive argument are two important life-skills. This elective helps students become more comfortable speaking in front of their peers and larger audiences. Students learn how to research and plan speeches and participate in debates. Students also study famous speakers such as Martin Luther King Jr., Gandhi, Nelson Mandela, and John F. Kennedy by evaluating their styles of speech and what made them successful.

*Prerequisite: Modern World History or permission of Department*

**The War on Terror**

*(Semester 2)*

America and the world changed after September 11, 2001. This course begins by examining Al-Qaeda and the events that led up to that terrible day. It continues with America's response, including the wars in Afghanistan and Iraq, the killing of Osama bin Laden, Islamophobia in America and Europe, Guantanamo Bay and enhanced integration techniques, U.S. drone attacks, and the formation of ISIS. Finally, students debate current events and contemplate America's future policies.

*Prerequisite: Modern World History or permission of Department*

**Advanced Placement European History**

This yearlong, college-level course traces the development of European history from 1450 to the present day. It introduces the cultural, political, economic, and social factors that shaped the history of Europe. The course emphasizes the skills required to succeed both on the AP examination and in college-level history classes. Students critically examine historical texts and primary source material, analyze evidence, debate historical interpretations, and learn to express their own historical perspective through writing.

*Prerequisite: Permission of Department*

**Advanced Placement United States History**

This yearlong course provides students with the analytical skills and enduring understandings necessary to deal critically with the problems and materials in United States history. Students are prepared for success on the AP examination as well as intermediate and advanced level college courses. Emphasis is on determining the relevance, reliability, and importance of evidence used in historical scholarship. Students develop the skills necessary to develop an informed judgment and to present reasons and evidence clearly and persuasively in an essay format.

*Prerequisite: Permission of Department*

**Advanced Placement United States Government and Politics**

This course gives students a critical perspective on government and politics in the United States. Students begin by briefly studying the history that led to the formation of the republic and the vision that the framers of the Constitution had for the United States. During the remainder of the course, students are expected to become familiar with the various institutions, groups, beliefs, and ideas that constitute the American political process. There is a focus on the three branches of the federal government, the relationship between the federal government and the states, and how actors in government and among the citizenry shape public policy. Analysis of general concepts used to interpret American politics is complemented by examination of specific case studies.

*Prerequisite: U.S. History and permission of Department*

**History of Art**

*(Semester 1 and/or 2)*

History of Art compares and contrasts different styles and movements of art through the centuries, from classical antiquities to modern art and the contemporary art scene. Rather than follow a traditional timeline, the course jumps from century to century, making unusual and unexpected connections, and noticing that wildly different approaches to great art nevertheless share important characteristics and influences. Through discussion, research, and critical analysis, students reach a better understanding of how art has influenced and reflected our culture. The class incorporates numerous museum and gallery visits, as well as some “hands-on” art-making to help students better understand different approaches and techniques.

*Prerequisite: One credit of visual or performing art*

# Language

The Language Department prepares its students to live in a fast moving, global society. The Department's goal is to encourage each student to become a multi-faceted cultural person and to communicate and relate effectively with a different linguistic community. The Department not only provides the opportunity for a language student to become fluent, but focuses on developing cultural sensitivity by studying each civilization. Modern languages are taught in the target language and the Department encourages each student to participate in immersion outlets such as clubs, language-based trips and exchange programs.

The Language Department offers Chinese, French, Latin and Spanish. To support our students and to help them achieve their academic goals, we use a range of audio-visual materials that include French, Spanish, and Chinese satellite TV broadcasts and work in our state-of-the-art Language Lab. Students read for content, meaning and discussion. Exercises in grammar, structure and composition provide writing experience. We believe that an important aspect of all our courses is the preparation for lifelong learning experience.

Three years of the same language (through level III) are required for graduation.

## Chinese I

Chinese I is an introductory Mandarin Chinese course designed for students with no Chinese background. This course provides basic training in listening, speaking, reading and writing Mandarin Chinese. The goal of this course is to lay a solid foundation for further Chinese language study and to strive for well-rounded development of communicative skills in listening, speaking, reading and writing as well as developing an understanding of Chinese culture.

## Chinese II

Students continue to develop their communication skills in listening, speaking, reading and writing via student-centered activities. Chinese word-processing is introduced. Students further explore Chinese culture through various multimedia projects (posters, Chinese language films, etc.) and continue to build the foundation for more advanced study.

## Chinese III

Chinese III aims to continue to develop the students' communicative skills in listening, speaking, reading and writing in Mandarin Chinese through task-based activities. Students start to read Chinese without Pinyin except for new words. Common idioms and ancient stories behind them are introduced and students continue to gain a better understanding of Chinese culture.

## Chinese IV

Chinese IV promotes mastery of the language beyond the three-year language requirement and prepares students for further language studies in college. All the reading will be in Chinese characters with more sophisticated grammar and syntax. The goal is to further enhance

students' linguistic skills as well as their appreciation for Mandarin Chinese language and culture. Modern prose is introduced. Since the course is conducted entirely in Chinese, students are required to speak only the target language for the duration of the class.

## Chinese V

The Chinese V course focuses on further developing students' full range of language skills and interweaves appropriate cultural content. The wide variety of cultural topics includes school, family, food, sports, holidays and customs, travel, famous people, history, literature, and arts. Students explore both contemporary and historical Chinese culture via the Mandarin Chinese language in order to prepare them for college-level studies in Chinese. Since the course is conducted entirely in Chinese, students are required to speak only the target language for the duration of the class.

## French I

This introductory course is designed for students who have had no previous instruction in French or those in need of additional study before meeting the demands of French II. Students will develop a strong foundation through exposure to the four core language skills: listening, speaking, reading and writing. Students will learn to appreciate different French cultures around the world, and communicate in simple terms through interactive and cooperative learning. Literature, art history, film, and current media sources are incorporated extensively in this course.

**French II**

French II continues to emphasize the four core language skills with increased attention to grammar and pronunciation. Students communicate in both simple and complex sentences with a rich vocabulary. Communication skills are expanded with the goal of oral fluency and improved writing. Students begin to compose short essays in French and to read selected excerpts from various Francophone authors. French culture and civilization are studied in great detail through art history, film, and literary sources. The regular use of digital media is frequently integrated into the course.

**French III** (*Regular and Advanced*)

French III students continue to increase their proficiency in oral communication, reading and writing. They learn to express themselves in many ways in most of the tenses and with a richer vocabulary. They describe their likes and dislikes, analyze some of La Comtesse de Ségur's short stories and read *Le Petit Prince* by Antoine de Saint-Exupéry. Students work towards a mastery of listening and reading comprehension, grammar, and writing.

**French IV** (*Regular and Advanced*)

French IV students continue to develop the skills and knowledge necessary to speak French clearly and to read and write it critically. They watch live French newscasts, learn to analyze a text in the target language, and to articulate themselves clearly and expressively. They are able to hold a conversation, report clearly on an event, and discuss and debate ideas in all of the tenses. Since all classes are taught entirely in French, students who master French IV are able to function and interact easily in any French-speaking country.

**Advanced Placement French Language and Culture**

The AP French course is designed to elevate the students' communicative and analytical skills, improve their cultural awareness, and prepare them for the interpersonal, interpretive and presentational modes of communication demanded by the AP exam. Students are immersed in the French language during class, and they engage in many activities designed to improve their oral fluency. French, as an expression of the Francophone cultures in this interconnected world, creates a bond with those diverse communities for students along the way. The speaking, reading and written elements of the AP course center around global challenges, science and technology, contemporary life, personal and public identities, families and communities, and finally, beauty and aesthetics. Since the course is conducted entirely in French, students are required to speak only the target language for the duration of the class.

*Prerequisite: Permission of Department*

**Latin I**

Latin I is designed for students who have had no previous instruction in Latin. Students receive a thorough grounding in basic grammatical forms, including the five noun declensions and agreement of nouns and adjectives; pronouns; and the six verb tenses in the active and passive voice as well as elementary vocabulary. Students also learn about Roman civilization and the importance of the Latin language in Western culture.

**Latin II**

Students in Latin II complete their study of basic Latin grammar and syntax, as well as expanding their vocabulary. Students begin to read extended prose passages to prepare them for reading classical Latin prose in their third year.

**Latin III**

Students in Latin III undertake a comprehensive review of basic Latin grammar and vocabulary in the first semester. Students read the First and Third Catilinarian orations of Cicero during the second semester. Students also study Roman oratory and the general principles of rhetoric.

**Latin IV, V**

Students electing Latin IV are committed to developing a mastery of the language beyond the three-year language requirement. Latin IV is primarily a literature course which focuses on Latin poetry. The lyric poetry of Catullus and Horace or Vergil's *Aeneid* is offered in alternate years. This format allows students to take five years of Latin if they wish. Topics include the literary and historical contexts of the poetry, the language peculiar to each poet, and the various meters of Latin lyric and epic poetry. The primary aim of the course is to develop a critical understanding of Latin poetry.

**Spanish I**

This introductory course is designed for students who have had no previous instruction in Spanish or for those in need of additional study before meeting the demands of Spanish II. The course emphasizes the acquisition of basic oral and literacy skills by teaching the use of Spanish in daily situations such as meeting people, telling time, expressing likes and dislikes, and going shopping. Students are expected to participate actively in class and to be adventurous in the usage of simple expressions and verbs.

**Spanish II** (*Regular and Advanced*)

Spanish II continues to develop oral and listening proficiency, literacy skills and cultural knowledge through a variety of activities. The course focuses on the continued acquisition of grammar structures and vocabulary and covers the following topics: imperfect,

imperfect/preterite contrast, subjunctive, perfect tenses, future, and conditional. Thematic vocabulary is integrated into each lesson. The use of audio and visual materials in class, as well as in the Language Lab, encourages conversation in the target language. Spanish culture, art history and literature are incorporated extensively through supplementary readings and multimedia activities.

### **Spanish III** (*Regular and Advanced*)

Spanish III students continue to develop strong listening, oral, reading and writing skills by intensive immersion in a language classroom conducted completely in Spanish. After a comprehensive review during the first few weeks, emphasis is placed on a systematic review of Spanish grammar and the acquisition of the subjunctive. Emphasis is also placed on studying Hispanic culture and society through short films, reading and discussion, and extensive use of the Language Lab.

### **Spanish IV** (*Regular and Advanced*)

This course is designed for students with at least three years of experience in the language. Emphasis is placed on the acquisition of strong oral skills and guided conversation. Students use authentic materials like online sources, magazines, stories, short novels, and short films. Students interact with each other using authentic resources, placing importance on the communicative and cultural aspects of the language. Students are expected to participate actively and enthusiastically in class.

### **Spanish V**

Spanish V focuses on the dual themes of our place in society and how external factors influence our development as human beings. Students read from works such as *El Ingenioso Hidalgo Don Quijote de la Mancha* by Miguel de Cervantes, *Doña Perfecta* by Benito Pérez Galdós, *Romancero Gitano* by Federico García Lorca, *Canto General* by Pablo Neruda as well as selections from Jorge Luis Borges, Julio Cortázar, Jose Donoso, Gabriel García Márquez, and others. Students

also watch and discuss films and study current world events. Writing essays and giving oral presentations about the topics covered in class allow students to continue improving their writing and speaking skills. Since the course is conducted entirely in Spanish, students are required to speak only the target language for the duration of the class. Qualified students may take the AP Spanish Language and Culture exam with permission of the instructor.

### **Advanced Placement Spanish Language and Culture**

The AP Spanish course is designed to strengthen the four core language skills (speaking, listening, writing, and reading) that students have developed over the years, and to prepare them for the AP examination. Students read selected literary works and articles, listen to dialogues and short narratives, write essays regularly, and watch newscasts, documentaries and other programs from Spanish television. Since the course is conducted entirely in Spanish, students are required to speak only Spanish for the duration of the class.

*Prerequisite: Permission of Department*

### **Comparative Literature**

Comparative Literature offers advanced language students the opportunity to pursue their passion for foreign language and literature beyond the AP level. Students delve into literature from all over the world and explore its intersections with other media and disciplines such as cinema, music, art, philosophy, politics, history, and linguistics. Although conducted in English, the class provides students with the opportunity to examine works written in their foreign language(s) of study. Students venture beyond national and disciplinary boundaries in order to produce oral and written arguments on literary topics from a comparative perspective. Units include literary theory, literature and the arts, translation, East-West studies, and European languages and literatures.

*Prerequisite: AP French, AP Spanish, Latin V, Chinese V, or fluency in a language other than English*



# Mathematics

The mathematics curriculum is designed to provide a rigorous foundation in the basics of mathematics and the tools to foster logical thought and analysis. We want students to appreciate the nature, beauty, and scope of mathematics and to understand its potential in dealing with the world's increasing technological complexities. Critical thinking, collaboration and mathematical modeling are emphasized at all levels. In all mathematics courses, faculty help students develop successful study skills and effective test-preparation techniques.

For students whose backgrounds and aptitudes are strong, there are advanced sections of courses in our core curriculum. These include Advanced Placement Calculus BC, Multivariable Calculus and Differential Equations, Linear Algebra, and Advanced Math/Science Research. Each of these courses allow students who are passionate about mathematics to pursue excellence in the subject at the highest level.

Three years of mathematics, including Algebra I, Geometry, and Algebra II, are required for graduation.

## Algebra I

This course provides a thorough introduction to the language of algebra, including its symbols and the axioms and laws which govern its structure. Emphasis is given to the understanding and manipulation of all manner of algebraic expressions, from performing standard operations to factoring polynomials and simplifying radical expressions. Among the primary goals are competence in solving linear equations and inequalities in one variable, systems of linear equations in two variables, and simple quadratic equations. Experience is provided in graphing in the Cartesian plane and in applying algebraic methods to the solution of practical problems.

## Geometry (*Regular and Advanced*)

Devoted to plane Euclidian geometry, this course also extends into solid geometry. The subject is treated as a structured system and emphasizes deductive reasoning and mathematical proofs, whereby intuition and proofs are blended. Topics such as congruence, perpendicularity, geometric inequalities, parallelism, quadrilaterals, geometric proportions and similarity, circles, spheres, and surface areas and volumes of solids are studied.

## Algebra II

This course begins with a brief review of Algebra I and extends to include number systems, polynomials, rational expressions, linear equations and inequalities, systems of equations, elementary exponential and logarithmic functions, right-triangle trigonometry, and elementary probability and statistics. A graphing calculator is required.

## Advanced Algebra II and Trigonometry

Advanced Algebra II and Trigonometry includes all the topics in Algebra II as well as binomial theorem, trigonometric functions, analytic trigonometry, the concept of function, and a detailed examination of the logarithmic and exponential functions. A graphing calculator is required.

*Prerequisite: Permission of Department*

## Precalculus (*Regular and Advanced*)

This course reviews the concepts from Algebra II that are central to calculus and explores several discrete math topics. Calculus topics focus on the study of functions: polynomial, trigonometric, logarithmic, and exponential. Discrete topics include polar coordinates, sequences and series, permutations and combinations, the Binomial Theorem, and conic sections. Throughout the course, students are expected to use the graphing calculator to solve problems in each topic area. The advanced section extends the curriculum and explores topics in greater depth. An additional study of vectors and probability is included, and a TI-89 graphing calculator is required.

## Advanced Precalculus Accelerated

The course is intended for students who have demonstrated an exceptional commitment and aptitude in mathematics. Topics are explored more rapidly, challenging students to apply concepts and skills at the highest level. The first three chapters of the AP Calculus BC curriculum are covered in the fourth quarter. A TI-89 graphing calculator is required.

*Prerequisite: Permission of Department*

## Calculus

This course is an introduction to the fundamental concepts of calculus. The first semester consists of a review of analytic geometry and trigonometry, and the study of the derivative, continuity and limits, and

differentials. The second semester includes a study of integration, logarithmic and exponential functions, techniques of integration, and applications of integration. A graphing calculator is required.

*Prerequisite: Precalculus*

### **Statistics**

Topics for study in this course include the organization of data into patterns and the interpretation of them using regression and correlation. Emphasis is on designing experiments and utilizing probability and randomness to establish inference. Students explore confidence testing in both distributions and proportions and employ modern technology to achieve these ends. A graphing calculator is required.

*Prerequisite: Algebra II*

### **Biomathematics**

*(Semester I)*

Place-based and project-oriented, students are guided through a series of field exercises that require the collection of data, both biotic and abiotic. Data is analyzed using mathematical concepts, including algebra, geometry, statistical analysis, and modeling and students present findings through a variety of media from poster and PowerPoint presentations to formal, written reports. The culminating experience is a student-designed project of his/her own choosing. Possible studies include distribution of invasive species, the prevalence of the Woolly Adelgid on the mountain, carbon sequestration, species distribution, the economics of tree harvesting, and using drones and remote sensing to model ecosystems.

*Prerequisite: Algebra II and Biology*

### **Advanced Placement Statistics**

The AP Statistics course is built around four main topics: exploring data, planning a study, probability as a foundation for the procedures of statistics, and inferential reasoning. These four broad conceptual themes are studied in depth to prepare students for the Advanced Placement exam given by the College Board. Students use the computer and a TI-84 Plus graphing calculator to examine distributions, to plan studies, to make conjectures, to study random behaviors, and to analyze and draw conclusions from data. This course is more theoretical, more demanding, and requires a higher level of conceptual understanding than the Statistics course. This course may be taken concurrently with any of the calculus courses.

*Prerequisite: Advanced Precalculus and permission of Department*

### **Advanced Placement Calculus AB**

This is a college-level course that follows the syllabus of the College Board and is for students who intend to take the Advanced Placement examination in Calculus AB. Included are the rate of change of a function, limits, derivatives, integration, applications of the definite integral, transcendental functions and their derivatives and integrals, further methods of integration, and applications. A TI-89 graphing calculator is required.

*Prerequisite: Precalculus and permission of Department*

### **Advanced Placement Calculus BC**

This is a college-level course that prepares students to take the Advanced Placement examination in Calculus BC. It follows the syllabus of the College Board and is for students who have successfully completed the first year of Calculus, Calculus AB, or who have completed Precalculus and have their instructor's approval. Topics covered include a review of basic integral and differential calculus and techniques of integration, applications of the definite integral, polar coordinates, indeterminate forms and improper integrals, Taylor polynomials, approximation and interpolation, sequences and series, vectors, differentiation and integration of vector functions, and ordinary differential equations. A TI-89 graphing calculator is required.

*Prerequisite: Advanced Placement Calculus AB or permission of Department*

### **Multivariable Calculus and Differential Equations**

This course in advanced mathematics includes core components of multivariable calculus, linear algebra, differential equations, and statistics. The use of mathematical software (Matlab), as well as TI-89 graphing calculators, is emphasized. Satisfactory completion of an assigned final project is required. The course is also designed to complement the Advanced Math/Science Research course; for those students enrolled in both, the two courses can be interdisciplinary, if so desired, focusing on the area of mathematics that students often encounter in their research projects. The most common area is statistics, but other mathematical strands can be developed as needed. Completion of an individualized curriculum satisfies the project requirement of this course. A TI-89 graphing calculator is required.

*Prerequisite: Advanced Placement Calculus BC and permission of Department*

## Science

Scientific knowledge has grown so quickly in the last century that no single individual can be in command of all of the facts of even a single scientific discipline. At the same time, citizens must be able to make sense of science to be able to make informed decisions concerning technology, environmental concerns and medical questions, to name but a few. The overarching mission of the Science Department is to teach students the skills of logical and critical thinking, problem solving, research, and clear communication and to prepare students to find patterns underlying collections of facts.

No matter what course or what level, students not only see presentations from their teachers, but make presentations to their peers. They learn how to use an array of instruments, both in and out of the laboratory, to collect and analyze data and to present their results in professional scientific formats. Once students have completed their basic requirements in science, they can choose to pursue another year of biology, chemistry or physics; take a course in environmental science; or choose an elective that focuses more narrowly on a specific aspect of scientific inquiry.

Two core laboratory sciences (biology, chemistry or physics) are required for graduation.

### **Biology** (*Regular and Advanced*)

This survey of biology includes investigations of the campus and mountain ecosystems, cell structure and function, genetics, evolution, and human anatomy and physiology. In addition to classroom presentations, demonstrations and laboratory experiments, students carry out research on a study plot in the forest on the slopes of Mt. Everett.

### **Chemistry** (*Regular and Advanced*)

Topics covered in the course include chemical formulas and equations, physical states of matter, solutions and suspensions, carbon and its compounds, chemical reactions, the periodic chart, and nuclear reactions. Laboratory exercises cover stoichiometry, measurement, empirical formulas, chemical reactions, heats of reaction, quantitative studies of reactions, gas laws, molecular reactions, rates, acid-base reactions, electrochemical cells, oxidation-reduction reactions, and qualitative chemistry.

*Prerequisite: Algebra I*

### **Physics** (*Regular and Advanced*)

Physics is designed for the student who desires a deeper understanding of the physical world. Topics include linear mechanics, heat, light, sound, electromagnetism and selected concepts of twentieth-century physics. Because the course applies mathematics to physical systems, students should have an adequate background in mathematics.

*Prerequisite: Algebra II (may be taken concurrently)*

### **Environmental Science**

The scientific concepts learned in this course provide the student with the principles required to understand the relationships in the natural world and the environmental problems facing the biosphere. The course includes a strong laboratory component allowing students to learn through hands-on observation. Much of the laboratory work involves PowerPoint presentations and the use of modern scientific technologies such as GIS (Geographical Information Systems) and GPS (Global Positioning System) to show students how ecologists gather and utilize information.

*Prerequisite: Two core laboratory courses*

### **Sustainable Resource Management**

*(Semester 1 and/or 2)*

Students in this course are committed to making Berkshire School more environmentally sustainable. Students work directly with the day-to-day operations of the physical plant to support effective and ethical decision-making in sustainability and to develop steps toward implementing the school's sustainability plan. Success is monitored through an ongoing emissions inventory, waste and water management databases, and life cycle analysis. Students develop and construct major research projects, write position papers, and make formal presentations to different constituencies of the Berkshire community.

*Prerequisite: Two core laboratory courses*

**Astronomy***(Semester 1 and/or 2)*

Students in the first semester of Astronomy focus on the Solar System. They first consider the historical development of our modern picture of the Solar System and then consider the individual pieces of it: planets and their satellites, the asteroids, and comets. Students in the second semester broaden their perspective beyond our Solar System and study the universe as a whole. Stars, galaxies, and cosmologies are investigated. Current hot topics such as the big bang theory, black holes, and dark matter are discussed and debated.

*Prerequisite: Two core laboratory courses*

**Aviation Science***(Semester 2)*

This course prepares students to pass the FAA Ground School Certification Exam, an initial requirement for earning a pilot's license. Students in the course sit for the 100-question multiple-choice examination in late May in hopes of earning certification. The course focuses on the study of aerodynamics, meteorology, navigation, radio communication, and instrumentation as they all relate to flying an airplane. Students use in-class flight simulators to gain experience with the controls and instruments used in flying. In addition to the academic work for the course, each student completes 6-10 hours of flight training with flying instructors at the Great Barrington Airport.

*Prerequisite: Two core laboratory courses*

**Biomathematics***(Semester 1)*

Place-based and project-oriented, students are guided through a series of field exercises that require the collection of data, both biotic and abiotic. Data is analyzed using mathematical concepts, including algebra, geometry, statistical analysis, and modeling and students present findings through a variety of media from poster and PowerPoint presentations to formal, written reports. The culminating experience is a student-designed project of his/her own choosing. Possible studies include distribution of invasive species, the prevalence of the Woolly Adelgid on the mountain, carbon sequestration, species distribution, the economics of tree harvesting, and using drones and remote sensing to model ecosystems.

*Prerequisite: Algebra II and Biology*

**Advanced Topics in Biology***(Semester 2)*

This course is designed to give students extensive experience with experimental and research methods used in several different disciplines within the biological sciences. The course includes presentation of background material through readings and class

discussion and long-term experimental projects on various aspects of genetics and biotechnology.

*Prerequisite: Biology and Chemistry*

**Psychology***(Semester 1 and/or 2)*

In first semester, students explore topics in neuroscience, child development, sensation, and perception. By semester's end, students recognize the parts of the brain associated with everyday functions such as eating and sleeping, and understand why children cannot lie or recognize race and gender until a certain age. Students also examine illusions and discuss theories on how we see color and experience pain. In second semester, students study topics in learning, memory, personality, social and abnormal psychology. Students engage with famous psychologists such as Pavlov and Skinner, look into the controversial studies of Zimbarbo and Milgram, and explore the ideas of Freud and Jung. Throughout the semester, students consider how advertisers use the information psychologists have discovered to sell products and analyze the effectiveness of eyewitness testimonies. Students conclude the semester by working to understand the cause of disorders such as schizophrenia and obsessive compulsive disorder.

**Advanced Math/Science Research**

This yearlong course offers students seeking an independent laboratory experience an opportunity to design and execute an original research project of their choice in the biological, physical, or social sciences. Each student works in collaboration with a faculty mentor and a professional research scientist in a format determined by the student, the mentor, and the instructor. Students are required to work two weeks during the summer preceding their enrollment in the class. Students write a critical review paper and a research paper, both in scientific journal format, and present the results of their year's research to members of the department and others in the Berkshire community. Enrollment in the class is limited. A TI-89 graphing calculator is required.

*Prerequisite: Two core laboratory courses, Precalculus, and permission of Department*

**Advanced Placement Biology**

Designed for second-year biology students with a strong interest in biological science, this college-level offering prepares students to succeed on the Advanced Placement exam in Biology. Topics covered include biochemistry, cell structure and function, genetics, botany, evolution, ethology, ecology, and human physiology and anatomy. To afford extra time to meet AP curriculum requirements and to prepare for the examination, the class also meets one night each week.

*Prerequisite: Biology, Chemistry and permission of Department*

**Advanced Placement Chemistry**

This course prepares students to succeed on the Advanced Placement exam in Chemistry. Topics covered are the same as in the introductory course, but the approach is more formal and in greater detail. Strong performances in previous math and science courses are essential for success. Laboratory exercises are modeled on those designed for college freshmen; the mathematical skill level is appropriate for engineering and physical science majors. Topics include stoichiometry, acid-base equilibria, spectroscopy, and redox equilibria. A premium is placed on accuracy, precision and reproducibility in measurement and data analysis as such emphasis is essential for a heightened level of quantitative chemical analysis.

*Prerequisite: Two core laboratory courses (one must be Chemistry), Advanced Algebra II and Trigonometry, and permission of Department*

**Advanced Placement Environmental Science**

This yearlong course is the equivalent of a one-semester, introductory college course in environmental science and prepares students for the Advanced Placement exam in Environmental Science. Students undertake a more advanced study of topics in ecology and environmental science by exploring the scientific principles, concepts, and methodologies required to understand the relationships of the natural world. The course includes a strong laboratory and field investigation component, allowing students to understand the environment through firsthand observation. Topics include ecosystem concepts, the biosphere, the atmosphere, human population dynamics, air, water and soil pollution, global climate changes, soil science, and choices for the future.

*Prerequisite: Two core laboratory courses (one must be Chemistry) and permission of Department*

**Advanced Placement Physics C: Mechanics**

This course is a preparation for the C-level Advanced Placement exam in Physics. The course offers a broad foundation in physics and is designed for those with interest in majoring in the physical sciences or engineering. Classical mechanics (kinematics through rotational motion and oscillations) are covered. Time permitting, electricity and magnetism are also studied.

*Prerequisite: Two core laboratory courses (one must be Physics), Calculus and permission of Department*

## Virtual High School

Berkshire School has joined forces with Virtual High School (VHS), one of the nation's longest running, and most successful online learning communities. The VHS Collaborative has found that VHS classes offer more time to be reflective about discussions. Students have the opportunity to work with other students in a virtual classroom space, and VHS students (and teachers) are from a variety of other states, other countries, and other cultures. VHS classes also help students better prepare for college and careers. Many students take a VHS course and find their passion for careers or college majors. VHS students say that they feel better prepared for college because through VHS they learn to advocate for themselves, work independently and manage their time and learning. Many colleges are now using online courses to enhance face-to-face college courses, and VHS students have a head start because they are already accustomed to learning in an online environment. VHS offers a terrific way for students to broaden their educational horizons and take classes that would otherwise be unavailable to them, in an environment that is safe, challenging, and fun.

### AP Computer Science A

Advanced Placement Computer Science A is designed to prepare students for the College Board's AP Computer Science A Exam. The course curriculum covers the topics and activities of a first-year computer science course at the undergraduate level. The course introduces the Java programming language while emphasizing universal language techniques like syntax, semantics and readability. Students gain mastery in programming concepts by using a subset of Java features that are covered when needed throughout the course content. This allows the student to understand and master important concepts that will apply to programming problems in many additional languages.

*Prerequisite: Algebra II*

### CAD: Computer Aided Design

*(Semester 2)*

CAD introduces students to Creo Elements (formerly named ProEngineer) 3D parametric solid modeling software. Students begin by exploring basic design commands such as lines, circles and rectangles. These commands are used to create valid sketches. They are then applied to create extrusions and other generic three-dimensional objects. The course culminates with the creation of three-view technical drawings for student-created solid parts.

### Computational Science and Engineering Using Java

*(Semester 1 or 2)*

This course is an introduction to computational science, an interdisciplinary method of scientific inquiry. Students develop a working knowledge of Java, the most important new computer language to arise in the last decade. Students also gain experience with the fundamental ideas of calculus and its application in science and engineering. The emphasis

of the course is scientific programming, and not simply learning Java. The Java language is used as a tool in building mathematical models that are of interest to scientists and engineers.

*Prerequisite: Algebra II, Geometry and one year of laboratory science*

### Computer Animation with Scratch

*(Semester 1 or 2)*

Students who enjoy working on the computer, creating characters, writing stories, or playing games will all find a fun opportunity with Scratch. Scratch is a free visual programming language that helps students create interactive digital stories, animations, and games. It's simple to use, and it gives students a rich environment in which to learn some basic computational programming skills. This course is an introductory-level class that does not require a background in computer programming.

### Computer Science Honors

*(Semester 1 or 2)*

This course is an introduction to computer science, covering the basic concepts and elements of the Java programming language and introducing object-oriented programming. Students gain experience writing programs that are well documented according to industry standards and have the opportunity to create Java Applets and learn about Graphical User Interface programming with Swing. Additionally, the students are encouraged to work both independently and collaboratively to solve practical problems that illustrate application-building techniques.

*Prerequisite: Algebra I*

**Creating Effective PowerPoint Presentations***(Semester 1 or 2)*

Explore technology and multimedia! This course offers the opportunity to conduct an extensive inquiry and research into subject matter needed to produce a multimedia presentation/project utilizing the full range of available multimedia functions (sound, video, computer graphics, animation, and text). Students must have access to PowerPoint in order to complete this class.

**Programming in Visual Basic***(Semester 1 or 2)*

This course is an exploratory programming course that uses one of the easiest programming languages in the world today, Visual Basic. It's a graphically-oriented language that allows for the easy construction of useful programs. Students gradually build a vocabulary and syntax to create programs that meet specific guidelines. The logic and creativity used in solving the course problems enlarges a student's capacity for problem-solving in all other disciplines. An intermediate level of Windows OS navigation is recommended.

**Video Game Design Using GameMaker***(Semester 1 or 2)*

This course provides an opportunity for students to immerse themselves in the world of video game design and development. Participants learn key programming constructs using GameMaker software (a robust, yet easy-to-use game creation tool). In addition, students learn to use software to create original graphics and sound engineering software to create and edit sounds

for their games. By the end of the course, students will have created a wide variety of video games. Each class celebrates their accomplishments regularly, by sharing games with their peers for feedback and enjoyment.

This course is an introductory-level class that does not require a background in computer programming.

**Web Design: Advanced***(Semester 1 or 2)*

In this course, students learn how to apply intermediate and advanced techniques in HTML and CSS to set up a professional-looking website. Students are guided by online tutorials to review and increase their HTML vocabulary and syntax. They also learn how to upload pages to the Internet through free web hosting sites. An intermediate level of ability in a web browser and its associated features and an intermediate level of ability in Windows/Mac OS navigation and file management are recommended.

**Web Design: Basics***(Semester 1 or 2)*

This course explores the artistic and functional principles of web design, the web development process, best practices in working with a client, and the technical development of a final web product. Students develop skills that will expand their understanding of the World Wide Web and its many elements. This course takes a wide perspective on design, and it will not assess students on their knowledge of HTML, CSS, or specific web page authoring software. A basic level of ability in a web browser and its associated features is recommended.

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Berkshire School admits students of any race, color, religious affiliation, national and ethnic origin and qualified handicapped students to all rights, privileges, programs and activities generally accorded or made available to students. We do not discriminate in violation of any law or statute in the administration of our educational policies, admissions policies, scholarship and loan program, and athletic or other school-administered programs.



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