



# Curriculum Guide

2023-2024

## Our Motto

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*PRO VITA NON PRO SCHOLA DISCIMUS*

- LEARNING—NOT JUST FOR SCHOOL BUT FOR LIFE ▪

## Our Core Values

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CURIOSITY

INTEGRITY

RESPECT

INCLUSION

PERSEVERANCE

RESILIENCE



## Guided by our Mission

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/College Counselor, and the Dean of Academics. Form Deans and the Dean of Academics oversee and support the academic progress and performance of each student.

## Graduation Requirements

Students earn one credit upon successful completion of a yearlong course, one-half credit upon successful completion of a semester course (ending Spring 2023), and one-third credit upon completion of a trimester course (beginning Fall 2023). To graduate, students must earn 18 credits and meet the following *minimum* distribution requirements:

- **Arts:** one credit of visual and/or performing arts (all Third Formers take a full year of art)
- **English:** four years of English, and required every year while enrolled
- **History:** two years, including Modern World History and United States History. In addition, Third Formers must complete World History.
- **Languages:** three years of the same language through level III
- **Mathematics:** three years of mathematics, including Algebra I, Geometry, and Algebra II; four years strongly encouraged
- **Science:** two core laboratory sciences (Biology, Chemistry, Physics)
- **Health and Wellness:** required for Fourth Formers

To pass a yearlong course, the average of the three trimesters must be a passing grade. In addition, Sixth Formers must pass all course work undertaken during the spring trimester in order 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 Academics.

## 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. In addition to the exams for AP classes currently offered at Berkshire, only the following supplemental exams will be offered based on student interest: Macroeconomics, Microeconomics, Music Theory, and Psychology.

## Health and Wellness

In Health and Wellness, fourth-form students focus on developing life skills to support their overall well-being. Through self-reflection and class discussions, students explore the many ways they can build healthy relationships with themselves and others. This pass/fail course comprises three units, each focusing on a different aspect of wellness: Cognitive Well-Being and Adolescent Life Skills, Substances and Healthy Decision Making, and Human Relationships and Sexuality. Topics addressed include the teenage brain, mindfulness, stress management, decision making, substance use and abuse, gender and sexual orientation, sexual education and the reproductive system, consent, and healthy relationships. *This is a noncredit course.*

## Independent Study

Motivated students who demonstrate the commitment and aptitude to work independently at an advanced level may develop a project in partnership with a faculty advisor. An independent study is taken as a sixth course, either for a trimester or yearlong, and requires department and committee approval. Students must complete a final project or paper, as well as present their conclusions at A.R.I.S.E. (Advanced Research and Independent Study Exhibition) in the spring.

## VHS Learning

Berkshire School partners with VHS Learning to provide the opportunity to work in a virtual classroom space with students and teachers from around the world. Students gain experience working in a virtual platform and broaden their educational horizons by taking classes that would otherwise be unavailable to them. Online classes may only be taken as a sixth course or if the student has completed the highest level of the course offered at Berkshire. VHS classes are not calculated into Berkshire's GPA. For a course catalog, visit [www.vhslearning.org](http://www.vhslearning.org).

## Arts

Visual arts students may pursue a wide range of artistic disciplines, including studio art, ceramics, photography, digital art, and sculpture. 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 visual and/or performing art is required for graduation.

### Visual Arts

*Note: Visual Arts courses are yearlong electives; however, students may request to switch visual art disciplines at the trimester break if scheduling allows.*

#### **Ceramics**

*(Fall, Winter and/or Spring Trimesters)*

This course introduces 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. 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.

#### **Intermediate Ceramics**

*(Fall, Winter and/or Spring Trimesters)*

This intermediate-level course allows time for the dedicated potter/sculptor to further develop and refine the skills begun in previous levels. It also provides 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**

*(Fall, Winter and/or Spring Trimesters)*

Advanced Ceramics is designed 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 program in 3-D Art and Design. Projects are very open-ended and demand a high degree of critical and creative thinking, problem-solving and time to succeed.

#### **Digital Art**

*(Fall, Winter and/or Spring Trimesters)*

This course 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.

#### **Intermediate Digital Art**

*(Fall, Winter and/or Spring Trimesters)*

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

#### **Advanced Digital Art**

*(Fall, Winter and/or Spring Trimesters)*

Advanced Digital Art is designed for the highly 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 program in 2-D Art and Design.

### **Photography**

*(Fall, Winter and/or Spring Trimesters)*

This course is an introduction to basic digital photography. Utilizing digital SLR cameras, iMac computers and Photoshop software, students explore basic camera operation, editing techniques and aesthetic concerns. Through in-class projects and multiple off-campus field trips, they complete a variety of projects in both black/white and color. Digital cameras are provided to students during the course.

### **Intermediate Photography**

*(Fall, Winter and/or Spring Trimesters)*

This intermediate-level course explores 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**

*(Fall, Winter and/or Spring Trimesters)*

Advanced Photography is designed for the highly passionate 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 program in 2-D Art and Design. Cameras are provided, but students are strongly encouraged to have their own digital SLR camera.

### **Sculpture: Introductory, Intermediate, Advanced**

*(Fall, Winter and/or Spring Trimesters)*

In this course, students explore artistic expression and problem solving through three-dimensional form and space. Traditional materials include wood, metal, plaster and recyclables. Students may also work with our STEAM program and high-tech tools (3-D printers, laser cutters, Arduino boards, projection) to integrate light, sound and movement into their work.

### **Studio Art**

*(Fall, Winter and/or Spring Trimesters)*

This course introduces students to a variety of fine art-making processes. Students develop conceptual and technical skills while studying drawing, painting, and mixed media. It is a survey course that teaches 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.

### **Intermediate Studio Art**

*(Fall, Winter and/or Spring Trimesters)*

This intermediate-level art course expands upon each student’s understanding of the elements of art and principles of design. The course encourages 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**

*(Fall, Winter and/or Spring Trimesters)*

Advanced Studio Art is 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 program in Drawing, 2-D Art and Design, or 3-D Art and Design.

### **Advanced Placement 2-D Art and Design I**

### **Advanced Placement 3-D Art and Design I**

This yearlong Advanced Placement course is for committed and self-disciplined 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 2-D Art and Design II**

### **Advanced Placement 3-D Art and Design II**

This yearlong Advanced Placement course is for students who complete Advanced Placement Art and Design 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 Art and Design I and permission of Department*

## Performing Arts

*Note: Performing Arts courses are yearlong electives.*

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

Chamber Music emphasizes small ensemble skills including musicianship, intonation, interpretation, and performance practice. Students are encouraged to practice as an ensemble. The yearlong 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*

### **Chorus, Advanced Chorus**

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 yearlong 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.

### **Digital Music: Introductory, Intermediate, Advanced (Fall, Winter and/or Spring Trimesters\*)**

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 trimester. No musical experience is required. *\*Although Digital Music is a yearlong course, students may petition to join at the winter and/or spring trimester.*

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

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 and commitment is yearlong. Placement in Advanced Jazz Ensemble is by audition only.

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

### **Music Theory**

Music Theory allows students to explore music outside of our performing ensemble groups. This yearlong course is an introduction to the study of functional harmony including scales, intervals, chord constructions, harmonic progression, counterpoint, and ear-training. Students analyze chorales, sonatas, symphonies and other works, and they create original compositions, which culminate in a performance of their work by Berkshire's chamber orchestra. No musical experience is required. *Open to Forms IV, V and VI.*

### **Smartphone Moviemaking**

This yearlong course gives students the chance to take the moviemaking power of the smartphone to the next level. Students make music videos, spoof commercials, and other fun projects (some proposed by students) and learn how to make phone video look and feel more like a movie. The course covers camera shots, lighting, storytelling, and editing techniques using Adobe Premiere. Students gain important life experience in project management and communication skills as well as an increased understanding of how we tell stories in our modern, visual world. Students need access to a smartphone with ample memory and a laptop.

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

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

# 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.

## Literature and Writing: Individual Voices

The third-form English curriculum focuses thematically upon essential elements of the individual and the individual's place in the world at a time when our students are setting forth on their own missions of self-discovery as readers, writers, and thinkers. Third Formers receive a thorough grounding in principles of grammar and vocabulary while practicing various types of writing, such as critical analysis, reflective writing, and creative writing. Throughout the year, third-form teachers stress fundamental study skills important to all Berkshire classes, including critical reading, annotating a text, organization of course materials, and timely completion and submission of work. Texts may include, but are not limited to: *Educated*, *The Song of Achilles*, *Salvage the Bones*, and *The Buddha in the Attic*.

## Literature and Writing: Global Voices

*(Regular and Advanced)*

In fourth-form English, students extend and deepen the skills and thematic insights through engagement with literary texts that focus on immigration, displacement, and social justice. Building on the third-form English theme of individual voices, Fourth Formers broadens their focus to a global context that, in addition to providing opportunities to develop skills in critical reading and analytical writing, allows them to better

understand issues of human rights and equality within a transnational frame of reference. Students also learn how to work collaboratively and collectively through book group projects. They continue their study of the full range of literary genres and review grammar and usage, primarily in the context of strengthening and revising their own writing: students learn how to productively engage with the writing process through planning and drafting. The writing curriculum expands on the range of third-form assignments, focusing on more complex and formally structured expository and analytical essays; in addition to traditional literary analysis, this course includes units on the personal memoir, argumentative writing, and persuasive speeches, which each help students become more confident writers and eloquent speakers with a clear and distinct voice. Texts may include, but are not limited to: Trevor Noah, *Born A Crime*; Elie Wiesel, *Night*; Leila Aboulela, *Minaret*; Shyam Selvadurai, *Funny Boy*; Shakespeare, *The Tempest*; Viet Thahn Nguyen, *The Displaced*.

## Literature and Writing: American Voices

*(Regular and Advanced)*

Students in their fifth-form year explore the American experience through literature. By encountering a range of voices and perspectives they examine (and reexamine) what it means to be "American" and consider how that



designation shifts depending on one's identity. Students read texts that invite them to contemplate the complex relationship between America's past and the present moment. They also consider whose voices have historically been silenced in the American story and aim to amplify them. Expanding on the genres studied in previous courses, literary works in the fifth-form year include musicals, epistolary novels, and creative nonfiction; representative texts include *There There*, *The Color Purple*, and *The Things They Carried*. In addition, students continue to sharpen their writing skills through a variety of assignments, from journal entries, formal essays and persuasive pieces. Through each draft, students work on developing their unique voice and writing style with an eye towards drafting their college essay in the spring term.

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

This course is designed 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*

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

This course is designed for qualified Sixth Formers who want to undertake a rigorous and intensive literary study in preparation for the AP English Literature and Composition Exam. Students in the course build on the skills developed in their prior English courses and focus their efforts on preparing for that assessment. They cultivate their understanding of literature by reading and analyzing texts as well as by exploring concepts like character, setting, structure, perspective, and figurative language. Through practice in writing and evaluating AP-style prompts, students become more familiar with the College Board's criteria for successful analytical writing. By considering elements such as figurative language, imagery, symbolism, and tone—in addition to a primary focus on diction, syntax, and structure—students develop and deepen critical and analytic skills as readers and writers by expanding their ability to interpret and make sense of complex literary texts. Representative texts include *Hamlet*, *Things Fall Apart*, and *Frankenstein*.

*Prerequisite: Permission of Department*

### **Literature and Writing: Voices from the Margin** *(Fall Trimester)*

Voices from the Margin is a fall term course designed for **postgraduate** students who have completed four years of high school English prior to enrolling at Berkshire. Students learn the conventions of English courses at Berkshire and develop the skills necessary to take a sixth-form elective in the winter and spring terms. They practice writing in a variety of forms, from narrative to expository, as well as other hallmarks of the Berkshire English curriculum, such as student-centered discussion. Accompanying those efforts, students read a variety of texts—from shorter essays to full-length novels—that invite them to consider the various paths that have brought them to Berkshire and the impact they hope to have in their time under the mountain. Through this class, students intentionally build community among their postgraduate cohort that helps ground and orient them in their Berkshire experience.

*Prerequisite: Completion of four years of high school English or permission of Department*

### **Literature and Writing: Using My Voice** *(Fall Trimester, Regular and Advanced)*

Sixth-form English at Berkshire consists of two distinct parts: a term-contained course in the fall and elective offerings in both the winter and spring terms (noted in italics to follow). In the fall term, students contemplate the place they understand themselves to be as Berkshire School students and the major transitions they are undertaking in their lives as emerging adults. Through the study of various long and short form texts, students consider the complex relationship between individuals and communities they inhabit. Representative texts include *Home Fire*, *The History Boys*, *The God of Small Things*, as well as supplementary essays, poems, and short fiction. Students consider their own identities within the systems they live, culminating in the preparation of their senior speech centered on their understanding that they present to their classmates.

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### **Literature and Writing: Electives (Winter, Spring)** *(Italicized offerings below will vary each year)*

#### **Boarding School Literature** *(Winter and Spring Trimesters)*

Boarding schools have long provided a rich backdrop for a variety of literary texts from *Harry Potter* to *Never Let Me Go*. This course examines why boarding schools are such powerful sources of inspiration for authors and fascination for the reading public. Students consider a variety of texts—from novels to essays to film—where boarding school is either the setting or the subject. These texts invite students to consider the archetypes that make up the boarding school genre, as well as explore

questions of privilege and access and contemplate how these schools function within their larger society. Students also write original fiction using boarding school as the backdrop and reflect on their own boarding school experience in personal narrative. Representative texts include *Prep*, *Admissions*, and various supplementary materials, including essays and short fiction.

### **Contemporary Memoir**

*(Winter and Spring Trimesters)*

This course explores the memoir genre through a global lens of Asian, African, European, Middle Eastern, and South American cultures. Students read and analyze both short and long-form memoirs in an effort to better gain an understanding of the experiences related to the development of one's identity and the exploration of self (across a wide range of writers) as it appears in the memoir. Students also explore their own unique story as it relates to the course material. Authors may include: Azar Nafisi, Trevor Noah, Ngugiwa Thiong 'O, Thi Bui, Abeer Hoque and Yiyun Li. In addition to reading and critically responding to course texts, students draft their own memoir focusing on understanding oneself within the global community.

### **Dystopian Fiction**

*(Winter and Spring Trimesters)*

Dystopian fictions – fictions that present frightening visions of the future of our world – have been surprisingly popular throughout the last century or so (think of Orwell's *1984*, or more recently, *The Hunger Games* or the *Divergent* series). Why have so many writers devoted their talents to producing such dark visions? And perhaps even more curiously, why have those visions proven to be so popular? In this course, students study some of the most important examples of modern dystopian fiction. Possible readings include: George Orwell's *1984*; Aldous Huxley's *Brave New World*; and Margaret Atwood's *A Handmaid's Tale*.

### **The Mountain and Me**

*(Winter and Spring Trimesters)*

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 nonfiction 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.

### **Mystery and Thriller**

*(Winter and Spring Trimesters)*

The world of suspense has a unique ability to engage readers, and, in this class, students play detective as they read and analyze various types of crime fiction, which may include traditional detective stories, espionage, and thrillers. The class looks at the ways in which mystery, in literature and film, plays into our fears. Students examine mystery narratives analytically and explore the genre creatively by writing a short mystery story. Texts may include short stories by well-known mystery writers such as Edgar Allen Poe and longer narratives by writers such as Agatha Christie or John LeCarre.

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### **College Writing\***

This is a yearlong writing-intensive course, focusing on an assortment of rhetorical techniques including narration, description, argument, definition, and more. College composition classes require the ability to move smoothly through these methods of communication, and students are expected to write for many different courses including sociology, history, English, and more. This course helps students to be flexible and attuned to the requirements of the courses they will take in their college careers. The texts consist of a range of cross-disciplinary readings from literature, sports, history, culture, journalism, and more. *Open to Forms V and VI. This elective may only be taken in addition to a core English course. \*Offering is subject to availability.*

### **Creative Writing**

This yearlong 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 year. *Open to students in Forms IV, V and VI who have successfully completed the course application (or received departmental permission). This elective may only be taken in addition to a core English course.*

### **Advanced Humanities Research**

See full description of this interdisciplinary course under History. *This course may only be taken in addition to a core English course. Open to Form VI and, pending availability, Form V. Enrollment in the class is limited.*

### **Advanced Topics in Race, Class and Gender**

See full description of this interdisciplinary course under History. *This elective may only be taken in addition to a core English course.*

# 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.

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 United States History, are required for graduation. In addition, Third Formers must complete World History.

## World History

This third-form course helps students understand how five major world religions have shaped past, current, and future historical events on a global scale. More specifically, students study the basic tenets of Hinduism, Buddhism, Judaism, Christianity, and Islam in relation to historical examples and more contemporary events. While content plays an important role in this course, a great deal of focus is 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 provides students with a foundation in micro and macro-economic principles in the first two trimesters: supply, demand, market equilibrium, subjective value theory, theory of production, theory of cost, and different forms of industrial organization. The final trimester 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. Working with a Berkshire donor who has established an endowment for philanthropy, students 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 those around us.

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

**American Foreign Policy in the 21st Century**

This yearlong course looks into the events leading up to September 11th, 2001, and how that day shaped American foreign policy for the rest of the century. Students study and evaluate America's War on Terror and how it has impacted its relationship with countries like Afghanistan, Pakistan, Yemen, Saudi Arabia, Syria, and Iran. Special attention is paid to how Presidents George W. Bush, Barack Obama, Donald Trump and Joe Biden have viewed what America's role in global politics should be.

*Prerequisite: Modern World History or permission of Department*

**Ethics**

This yearlong 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 trimester of the course by selecting, researching, and leading a debate about a controversial ethical topic. *Open to Form VI and, pending availability, Form V.*

*Prerequisite: Modern World History or permission of Department*

**Leadership: Politics and Society**

This course examines the revolutionary nature of female leadership across time and cultures. Students examine great female leaders throughout history, looking at specific powerful women who led groups of individuals for various political, cultural, and social reasons. We explore what it means to be a leader, how our understanding of that has/has not changed over time, as well as contemporary and historical narratives that shape our understanding of how society accepted/viewed these women. We compare their accomplishments with their contemporaries--men and women--to understand whether these women were really unique as leaders in their societies and during their time.

*Prerequisite: Modern World History or permission of Department*

**Advanced Topics in Race, Class and Gender**

In this interdisciplinary course, students learn to think chronologically about the effect European crises, wars, reformations, and faiths brought to bear on the descendants who colonized America and, ultimately, created the nation that dispossessed, enslaved, and perpetuated the destructive triangle of racial, class-based, and gender oppression. Students unpack the myth of American land as free and colonizers as settlers fleeing

religious persecution. Through a study of fiction, non-fiction, primary and secondary documents, students think about their own experiences and the experiences of others who reside in America and are impacted by its legacy. *Open to Forms V and VI. This elective may only be taken in addition to a core English course.*

*Prerequisite: Modern World 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: United States History and 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 fall trimester 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 a core English course. Open to Form VI and, pending availability, Form V. Enrollment in the class is limited.*

*Prerequisite: Selection by Department Chairs*

**Advanced Placement Comparative Government and Politics**

This yearlong course introduces students to fundamental concepts used by political scientists to study the processes and outcomes of politics in a variety of country settings. The course aims to illustrate the rich diversity of political life, to show available institutional alternatives, to explain differences in processes and policy outcomes, and to communicate to students the importance of global political and economic changes. Six countries form the core of the AP Comparative Government and Politics course: China, Great Britain, Iran, Mexico, Nigeria, and Russia. By using these six countries, the course can move the discussion of concepts from abstract definition

to concrete example, noting that not all concepts will be equally useful in all country settings.

*Prerequisite: United States History or 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. *Not recommended for students who have already taken United States History.*

*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: United States History and permission of Department*

# Languages

The Languages Department aims to prepare its students to live in a constantly evolving, global society. The Department's goal is to encourage each student to become a culturally aware individual and to communicate and relate effectively with a diverse linguistic community. The Department not only provides the opportunity for a language student to become proficient, but also focuses on developing students' sensitivity to the cultural and linguistic heritage of others, as well as raising awareness of how these differences influence their own culture. Each class is 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 Languages Department offers Chinese, French, Latin, and Spanish. To support our students and to help them develop their interpretive, presentational, and interpersonal skills in all modes of communication, we use a range of audiovisual materials obtained from authentic sources. In addition to effective communication, our content-based teaching encourages collaboration across disciplines, provides place-based experiences, and fosters inclusion and diversity.

Three consecutive 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 is 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

French I is designed to introduce students to the French language and Francophone cultures as well as help students to develop the ability to speak, read, write, and listen to French. Course themes are presented and discussed through a variety of media, including online learning platforms. Teaching methods include reading and discussing cultural documents in class as well as practicing vocabulary and new grammatical structures in context, all of which enables students to begin to understand French and express themselves in the language. The course is conducted entirely in French.

**French II** (*Regular and Advanced*)

French II builds upon French I, emphasizing the four core language skills and improving the language proficiency of students. Course themes are presented and discussed through a variety of media, including online learning platforms. Teaching methods include reading and discussing cultural documents in class as well as practicing vocabulary and new grammatical structures in context, all of which enables students to further understand and express themselves in French. The course is conducted entirely in French.

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

French III students continue to increase students' proficiency in listening, speaking, reading and writing. Project-based, the course encourages students to further express themselves using all of the tenses and a rich vocabulary. Teaching methods include reading and discussing cultural documents in class as well as practicing vocabulary and new grammatical structures in context, all of which enables students to further understand and express themselves in French. The course is conducted entirely in French.

**French IV, V** (*Regular and Advanced, IV only*)

French IV and V students continue to develop the skills and knowledge necessary to speak French clearly and to read and write it critically, taking into consideration the interpersonal, interpretive, and presentational modes of communication. The course centers around student-driven projects addressing French and Francophone themes such as cooking, fashion, sports, and art. Students watch films and newscasts, analyze authentic texts, and articulate themselves clearly and expressively during debates and presentations. Themes alternate from year to year so as to allow students the opportunity to pursue a fifth year of study.

**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 fall trimester. Students also read and translate modified passages in the first part of the year in preparation for translating true prose during the second half of the year. These works include, but are not limited to, Caesar, Eutropius, and Cicero.

**Latin IV, V**

Students electing Latin IV, V are committed to developing a mastery of the language beyond the three-year language requirement. Latin IV, V is primarily a translation course that focuses on Latin poetry and Roman comedy. The course alternates from year to year in material covered, allowing students the opportunity to pursue a fifth year of study if they so choose.

**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. The course is taught entirely in Spanish.

**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 encourages conversation in the target language. Spanish culture, art history and literature are incorporated extensively through supplementary readings and multimedia activities. The course is taught entirely in Spanish.

### **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 online learning platforms. The course is taught entirely in Spanish.

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

Spanish IV students continue to develop the skills and knowledge necessary to speak Spanish clearly and to read and write it critically, taking into consideration the interpersonal, interpretive, and presentational modes of communication. The course centers around level readers, engaging students in stories using Spanish in authentic and cultural contexts. Students analyze video, newscasts, songs and supplementary texts, and learn to better articulate themselves clearly and expressively in the target language.

### **Spanish V**

This yearlong course is a panoramic journey through Latin American literature and film. The first part of the course begins with a general overview from the Pre-Columbian period, going through the colonial, independence periods, and modernismo, which was a paramount movement in Latin American literature that questioned conventional notions of literary discourse. The second part of the course moves forward towards the 20th century with an overview from postmodernismo, vanguardismo, post-vanguardismo, regionalismo, new narrative, el boom and finishing with literature of modern revolution, culture and politics in Latin America. As students immerse themselves in the literature, special attention is given to the socio-historical context of Latin America. Therefore, both political and cultural issues are of interest and the focus of analysis and class discussions.

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

The Advanced Placement Spanish Language and Culture 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 Spanish language during class, and they engage in many activities designed to improve their oral fluency. The acquisition of cross-cultural awareness is an important objective since there is great diversity in the Spanish speaking world as seen in the organization of the Course, which is divided into six thematic units. Each unit is developed using authentic written sources, news segments and class activities, including radio segments broadcast throughout campus. Discussion is an important requirement in class, and spontaneous participation is encouraged. Grammar is reviewed briefly in context. 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*



# 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, 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; four years are strongly encouraged. *Students taking Algebra II or higher are required to have a TI-Nspire graphing calculator, either CX or CAS. Students who plan to take AP Calculus should purchase the CAS version. The TI-Nspire is not required for Algebra I or Geometry.*

## 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, and right-triangle trigonometry.

## 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.

*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.

## 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 third trimester.

*Prerequisite: Permission of Department*

## Discrete Mathematics\*

This course offers an introduction to four branches of discrete mathematics: combinatorics, sequences, symbolic logic, and graph theory. Students practice applied mathematics through group projects on election theory, fair division, population growth, supply chain optimization, recursion, game theory, and the Monte Carlo method. Students explore the intersection of discrete mathematics and computer science. Throughout the course, students utilize several software packages along with the TI-Nspire calculator to assist in finding solutions.

*Prerequisite: Algebra II. \*Offering is subject to availability.*

## Calculus

This course is an introduction to the fundamental concepts of calculus. The fall trimester consists of a review of analytic geometry and trigonometry, and the study of the

derivative, continuity and limits, and differentials. The second half of the year includes a study of integration, logarithmic and exponential functions, techniques of integration, and applications of integration.

*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.

*Prerequisite: Algebra II*

### **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-Nspire CX CAS 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 college-level course 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.

*Prerequisite: Advanced Precalculus and permission of Department*

### **Advanced Placement Calculus BC**

This college-level course 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.

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

### **Linear Algebra and Differential Equations**

Offered in alternate years in relation to Multivariable Calculus, this course in advanced mathematics includes the core components of linear algebra. Topics covered include matrices, rank, determinants, linear equations, vector spaces, linear independence, eigenvectors, and linear transformations. The course includes applications to linear programming, differential equations, and computer graphics, and students explore the overlap between computer science and mathematics. Students learn how to solve differential equations analytically, numerically, and graphically. Equations studied include separable, Bernoulli, linear, first order, second order, and both homogeneous and non-homogeneous differential equations. Students use various techniques, including separation of variables, substitution, integrating factor, etc. Students also explore the connections between eigenvectors in linear algebra and how to use them to solve differential equations.

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

### **Multivariable Calculus**

Offered in alternate years in relation to Linear Algebra and Differential Equations, this course in advanced mathematics includes core components of multivariable calculus. Students begin with vector algebra and geometry, cylindrical and spherical coordinates, three-dimensional surfaces, vector functions, velocity and acceleration, speed, tangent and normal vectors, arc length and curvature. The second half of the year covers functions of several variables, partial differentiation, grad, div, curl, tangent plane, normal line, level curves/surfaces, extrema and Lagrange's method, multiple integrals, change of variables, Jacobian applications, vector analysis, and more complex differential equations. While the course emphasizes concrete computations over proof, it demands that students move beyond thinking of mathematics as a set of rules and algorithms to memorize and instead encourages students to approach problems with greater independence and maturity.

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

### **Computer Science and A.I.**

This yearlong course is based on Harvard's CS50 class series. The course explores an introduction to the intellectual enterprises of computer science, the art of programming, and develops a foundation in modern artificial intelligence. Students learn how to think algorithmically and solve problems efficiently. Topics include abstraction, algorithms, data structures, encapsulation, resource management, security, software engineering, web programming, and topics in artificial intelligence and machine learning. Languages include C, Python, and SQL plus HTML, CSS, and JavaScript. This course is designed for students with or without prior programming experience.

*Prerequisite: Algebra II (may be taken concurrently with 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, physics) are required for graduation.

### **Biology**

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 for Regular; Adv. Geometry (may be taken concurrently) for Advanced*

### **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) for Regular; Adv. Precalculus (may be taken concurrently) for Advanced*

### **Environmental Science**

Students in this course inquire, learn, and advocate towards change for the long-term wellbeing of people and the planet. Through project, place, and land history-based learning, students have opportunities to engage in specific units in environmental science, ecological studies, and education for sustainability. They also have autonomy in self-designing inquiry-based projects, where they authentically share their unique processes, ideas, and questions within and beyond the Berkshire School community. Learning within the intersections and relationships of the environmental, social, and economic systems we are all a part of, this course aims to bring the classroom out into the community and the community into the classroom.

*Prerequisite: Two core laboratory courses or permission of Department*

### **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 conception in any of the STEM disciplines, including Computer Science. Each student works in collaboration with a faculty mentor and/or a professional research scientist in a format determined by the student, the mentor, and the instructor. Students prepare a research paper 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.

*Prerequisite: Two core laboratory courses (Advanced or AP preferred), Precalculus, and permission of Department*

**Introduction to Engineering**

This full-year course comprises four units, each focusing on a broad aspect of engineering: design, mechanisms, electronics, and project management. Each unit has subtopics that follow the “activity-, project-, and problem-based” approach, fostering independence and skills in open-ended problem-solving. Students engage in reflection activities and utilize software that not only prepares them for more rigorous engineering curricula but build and reinforce transportable skills that they can apply in other areas of their education and their lives. The course culminates with the opportunity for students to put their skills into practice as they design and build their own independent projects.

*Prerequisite: Biology and Chemistry (may be taken concurrently)*

**Advanced Principles of Engineering**

This is a yearlong foundation course of the high school engineering pathway. This survey course exposes students to some of the major concepts that they will encounter in a post-secondary engineering course of study. Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of materials and structures, automation, and kinematics. The course applies and concurrently develops secondary-level knowledge and skills in mathematics, science, and technology. By solving rigorous and relevant design problems using engineering and science concepts within a collaborative learning environment, students continually hone their interpersonal skills, creative abilities, and problem-solving skills. Students will also learn how to document their work and communicate their solutions to their peers and members of the professional community. It also allows students to develop strategies to enable and direct their own learning.

*Prerequisite: Algebra II and two core laboratory courses (one must be Physics)*

**Human Anatomy and Physiology**

This yearlong elective focuses on the form and function of the human body and is geared for students who are interested in learning more about how their body systems work and interact to maintain homeostasis. Through lectures, demonstrations and lab investigations, students learn about the organization of the body with topics ranging from cells to tissues to a survey of systems, such as the integumentary, skeletal, muscular, nervous, circulatory and the digestive system. Students use Pearson’s Anatomy and Physiology Coloring Book along with supplemental reading assignments and online ancillary materials.

*Prerequisite: Two core laboratory courses*

**Aviation Science**

*(Winter and Spring Trimesters)*

In this two-trimester course, students prepare for the FAA Knowledge Exam for Private Pilot which they will take at the end of the spring trimester. Topics include navigation, radio communication, aviation weather, instrumentation, and aircraft engines and systems. Additionally, every Sunday students have the opportunity to receive flight instruction at the local Great Barrington Airport.

*Prerequisite: Two core laboratory courses*

**Psychology**

In the fall trimester, students explore topics in neuroscience, child development, sensation, and perception. By midyear, students recognize the parts of the brain associated with everyday functions such as eating and sleeping, as well as 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 the second part of the year, 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. Students consider how advertisers use the information psychologists have discovered to sell products and analyze the effectiveness of eyewitness testimonies. Students conclude the year by working to understand the cause of disorders such as schizophrenia and obsessive-compulsive disorder. *Open to Form VI and, pending availability, Form V.*

**Advanced Environmental Science Research**

Advanced Environmental Science Research is designed for students who have already completed the AP Environmental Science course and are interested in applying their background knowledge to research projects related to ecology. During the fall trimester, students master ecological lab techniques through local exploration of Berkshire’s 400 acres. In the second part of the year, students turn their attention to the development of a culminating research project to submit for publication. In addition to lab, field, and class work, the course features several guest speakers and field trips to take advantage of the resources available in the Berkshires.

*Prerequisite: AP Environmental Science (or Environmental Science with approved application) 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 for the Advanced Placement exam in Biology. Topics covered include biochemistry, cell structure and function, genetics, botany, evolution, ethology, ecology, and human physiology and anatomy.

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

**Advanced Placement Chemistry**

This course prepares students for the Advanced Placement exam in Chemistry and is designed for second-year chemistry students. 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, Advanced Algebra II and Trigonometry, and permission of Department*

**Advanced Placement Environmental Science**

This yearlong course 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. *Not recommended for students who have already taken Environmental Science.*

*Prerequisite (Form VI): Two core laboratory courses and permission of Department*

*Prerequisite (Form V, pending availability): Biology, Chemistry, Physics, and permission of Department*

**Advanced Placement Physics C: Mechanics**

This course is a preparation for the C-level Advanced Placement exam in Physics and is designed for second-year physics students. 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, gravitation, and oscillations) are covered.

*Prerequisite: Two core laboratory courses, AP Calculus (may be taken concurrently), and permission of Department*

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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.



**BERKSHIRE SCHOOL**